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ART. I. ON ARTIFICIAL PUPIL. By EDWARD DELAFIELD, M. D. Surgeon to the New-York Eye Infirmary, and Lecturer on Diseases of the Eye.

THE extensive means furnished by the practice of the New-York Eye Infirmary for the observation of Diseases of the Eye, affords an ample opportunity to the surgeons attached to it, to test the correctness of the pathological and therapeutical views heretofore taken of that interesting class of diseases. I therefore feel it my duty, as one of those surgeons, to communicate to the public the results of such observations; and shall occasionally, as materials present themselves, offer such reflections on them as may occur to me. In these communications I shall adopt no particular order, but take up subjects rather as cases are brought before me, than in conformity to any definite plan. Nor do I wish it to be understood that I shall confine myself to original remarks, but shall avail myself of the labours of others, as far as they appear to me to have led to correct results.

The subject intended to be illustrated in the present paper, is *the operation for artificial pupil;* a subject which has extensively engaged the attention of the surgeons of Europe; an operation which has been performed in a greater variety of modes than any other within the compass of surgery.

The state of the organ rendering this operation necessary, is loss of vision caused by a morbid condition of the cornea or iris, or both, which has either destroyed the natural pupil, or rendered it useless; and where, therefore, the only mode of restoring sight, is to make a new pupil. The first cases which led to the performance of operations for this purpose, were unsuccessful operations for cataract by extraction, terminating in closure of the pupil. It was a case of this description in which Cheselden first operated with success; and this forms one of the instances most favourable, in general, to the success of this operation.

The states of the eye, requiring the formation of a new pupil, are extremely various, and as many different modes of operation have been devised for their relief, as there are different states of the organ requiring it. Guthrie,* who has written an excellent treatise on this subject, has enumerated no less than forty-six operations of this description; and has minutely described every variety of case in which the operation becomes necessary. This mode of considering the subject is, however, altogether too laboured and complex for the limits of this paper; and I shall confine myself, therefore, to a description of the principal states of the eye requiring an artificial pupil, with the appropriate operations for their relief.

The condition of the eye rendering the operation necessary, was stated to be, a morbid state of either the cornea or iris, or both of them. The disease, therefore, may be divided into the *simple*, when only one of these parts are in a morbid

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* Lectures on the operative surgery of the eye. 1823.

condition ; *complicated*, when they are both affected,* or any other parts are involved in the disease.

The simple includes two varieties ;

1. A dense indelible opacity in the centre of the cornea, sufficient to prevent the light passing through the natural pupil ; the eye being otherwise healthy.

2. The cornea sound ; but the pupil closed or obliterated.

In this case, with certain exceptions, the capsule of the lens is also opaque, and the iris adhering to it ; and therefore the only simple case is that in which the lens has been removed by extraction, or in some other manner destroyed.

The complicated states are more numerous ;

1. The central opacity of the cornea may be complicated with adhesion of that part to the iris ; this adhesion being in some cases partial, and including only a small portion of the border of the iris, in others, more considerable, and involving the whole, or nearly all of the pupillary margin.

2. The constricted or obliterated pupil may be conjoined with an adhesion of the iris to the opaque capsule of the lens ; the lens itself being either opaque or transparent ; either state indifferently as regards the operation.

3. This state may be combined with central opacity of the cornea ; or with adhesion of the cornea to the iris.

4. The closure of the pupil may have been caused by a prolapsus of the iris, which has become permanent, and the whole or greater part of the pupillary margin involved in the cicatrix.

Before describing the different operations applicable to these conditions of the eye, we must advert to the circumstances which make it proper or improper to operate in any individual case. The principal point to be ascertained is, whether the organ is in a state fit for vision after the removal of the obstacle proposed to be removed by the operation : in other words, " whether the retina retains its sensibility, and the vitreous humour its texture and transparency." It is

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* Mr. Travers.

obvious that without these conditions, all operations must be useless. The condition of the organ in these respects depends very much upon the character and seat of the original disease, and a careful examination of the history of the case will essentially aid us in making up our opinion. The most favourable case is that in which the cornea alone is the seat of the disease; the iris and other textures of the eye being healthy. Of this character is a simple central opacity of the cornea. A closed pupil from prolapsus of the iris is another case equally favourable, for here the iris is only passively concerned in the disease, and is in a healthy condition. Next in order, among the favourable cases, are those produced by external wounds or external inflammation; even although the iris be partially injured. A fourth is closure of the pupil after extraction; while that following depression is more unfavourable, as the accompanying inflammation is generally more severe, and sufficient to have produced much mischief among the internal textures of the eye. The last in order, of the cases upon which it is proper to operate, is a simple closure of the pupil, following inflammation of the iris.

In judging of the state of the organ, we must examine the colour of the iris, and its general healthy condition. If these be natural, the case may generally be considered sufficiently favourable to warrant an operation. If, on the other hand, the iris have lost its natural colour, and this alteration involve the whole of its surface, the case is hopeless, and no operation should be attempted. If, however, merely the pupillary margin be discoloured, and the rest be natural, the case is not necessarily unfavourable.

We must remark also, whether the iris retain its natural position in the globe. After disorganizing internal inflammation, we see, in one case, this membrane protruding forward, touching the cornea, and obliterating the anterior chamber, or its surface elevated into tubercles; or on the other hand, sunken and filling up the posterior chamber. The same causes may produce other marks of general diseased changes

in the eye, such as, permanent enlargement of the sclerotic vessels, and change of colour in that dense tunic ; distention of the globe by hydrophthalmia ; or a diminished size of the organ from a state of atrophy. All these circumstances, of course, render an operation useless, and therefore improper. Indeed, under the most favourable circumstances, these operations fail in a large proportion of cases ; and we must, therefore, never flatter either ourselves, or our patients, with too much hope of success.

As a general rule, it is improper to operate if the patient have not some accurate perception of light ; for there is no obstruction to vision, capable of being removed by operation, sufficient to prevent entirely the perception of light. Many of the cases, indeed, which present themselves, are so desperate, that we are willing to make any effort to restore the patient to sight. We therefore operate upon cases, in which the prospect of success is but faint ; because our operation can do no permanent injury, and if it fail, leaves him in as good a situation as we found him. I have now a patient at the Infirmary, whose case will serve as an illustration. He lost his sight from wounds of the eye received by fragments of glass, shivered by the discharge of a cannon. One eye is completely destroyed. The other was extensively wounded, the cornea and iris diminished in size, and the external half of each, disorganized and useless, the corresponding half of the globe being soft, and the vitreous humour evidently in a dissolved state. The rest of the eye, however, opposite to a sound part of the cornea and iris, is firm and apparently healthy ; and a sufficient space is left in which a new pupil may be made. Such a case is indeed sufficiently unfavourable ; but I shall undertake the operation, not without some hope of success, because the injury done to the organ is the result of external violence, not internal inflammation.

A great obstacle to our success in many of these cases, is the disposition to inflammation remaining in the organ, in consequence of frequently repeated attacks of disease. In making up our prognosis, this also must be taken into the

account, and if an operation be determined upon, the patient must be prepared for it with more than usual care. It is sufficiently remarkable, how much a healthy iris may be wounded, or even lacerated, without any serious inflammation following; but if these parts be in a previous state of chronic disease, we cannot expect so favourable a result.

No advantage can be derived from performing this operation upon one eye, when the other is sound and enjoys good vision. The most successful operation for artificial pupil gives a degree of vision by no means equal to that of a healthy eye; and when one eye is good, a less perfect fellow to it is of little use.

The *degree* of vision depends much upon the size and situation of the new pupil. In general we cannot make it too large; and the greatest difficulty is to make it sufficiently so. A disposition to contraction exists in most cases, which must be allowed for in making the new pupil.

The *situation* of the new pupil is of much importance, but cannot always be regulated, as the nature of the case generally allows us to make it in one situation alone. Where we have a choice, however, we must remember that a central pupil is not only the most natural, but the most useful that can be made; for opposite to it is the most sensible part of the retina. The next most eligible situation is on the inner side of the original pupil; next, a corresponding situation on the outer side; and last and worst, the upper half of the iris, which is almost, or entirely covered by the upper eyelid, in the ordinary state of the eye.

Previously to the performance of any operation for artificial pupil, we should always ascertain whether any improvement to vision may not be gained by the use of belladonna or stramonium. The dilatation of the constricted pupil to the size of a small pin's head, or even less, will often give the patient a degree of vision, which will render any operation unnecessary. This precaution should in no case be neglected; for we will frequently in this manner restore good sight

when we least expect it. A very remarkable instance of this fact occurred in the following case.

Case I.—Steinberg was received March 12th, 1824, at the New-York Eye Infirmary, by my colleague, Dr. J. Kearny Rodgers; blind in consequence of closure of the pupils from inflammation of the iris. The constriction of the pupils appeared to be so complete, and the original inflammation so severe, that the patient was assured that he could expect no relief, except from an operation for artificial pupil, and that even in that case, success was extremely doubtful. It was evident that an operation was perfectly justifiable, if the smallest hope of success existed, for the degree of vision remaining to the patient was totally insufficient for any useful purpose. He could not discover the form of any object, and indeed could do little more than distinguish light from darkness. Before performing an operation, Dr. Rodgers took the precaution to order the application of extract of stramonium to the eyes. At the next visit the patient had gained a degree of vision, which made it evident that no operation would be necessary, and he was directed to continue the stramonium. Under this application, the sight regularly improved, until at length the patient could read without difficulty, type no larger than that of this journal. The most surprising circumstance attending this case is, that notwithstanding a slight enlargement of the pupils could be observed after the application of the stramonium, yet they were still so excessively small, that it was altogether unaccountable how the patient could see so accurately. The improvement in vision was permanent after the discontinuance of the stramonium; and this man now gains a comfortable subsistence by the occupation of comb-making, which he performs to the perfect satisfaction of his employer. The appearance of the pupils is shewn in the annexed drawing.*

The *preparation* of a patient for this operation by proper

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* See Plate ⁻ Fig. 5 & 6.

regimen is absolutely necessary, and should never be omitted. The operation should not be attempted before all trace of previous inflammation has subsided; but even then, an organ which has previously suffered from disease, is more liable to a return of inflammation, than a healthy one. The nature of the preparation depends upon each particular case. If some degree of congestion still remain in the eye, the patient should be repeatedly cupped, use purgative medicines, and have blisters drawn behind the ears, together with other treatment ordinarily employed for the purpose of subduing chronic inflammation. But if no such symptoms remain, low diet and complete abstinence from animal food for five or six days before the operation, together with the use of an occasional purgative, is all that is necessary.

Having now made all the preliminary observations which appear necessary, we shall proceed to the examination of the various operations proposed for the formation of an artificial pupil. There are a variety of different principles, upon which these operations have been founded. Each of these may be applicable to some particular case, and therefore, each should be understood; but the judgment of the surgeon must determine the one best adapted to the case under consideration at any given time. To assist this judgment, experience and observation may furnish some general rules.

There are three principal modes of performing this operation.

1. That of detaching the ciliary margin of the iris from the ciliary body; Coredialysis, or Iridodialysis, as it has been termed by authors.

2. A simple division of the fibres of the iris, in such a manner that their retraction may leave a pupil; Coretomia, or Iridotomia.

3. The removal of a portion of the iris, so as to leave an opening sufficient to answer the purpose of a pupil; Corectomia, or Iridectomia.

Each of these modes of operating has had its advocates, and unfortunately, the favourers of each have been too stren-

uous in insisting upon its application to every variety of case. We shall discover by an examination of the different cases, that each may be made useful.

1. Of Coredialysis.

In dissecting an eye, it is found that the iris may be easily separated from its ciliary attachment without laceration. It had also been observed, that occasionally this separation had been produced by accident, from blows or other violence; and that in such cases, the old pupil has been obliterated, and the new one has afforded the patient very tolerable vision. It was naturally concluded that an operation which imitated this accident, would succeed in giving sight, when the pupil had been closed by previous disease; and accordingly, at about the same time, Scarpa and Schmidt invented and practised this operation. It seemed at first to succeed; but it was soon ascertained that after a time, the new pupil thus formed, gradually contracted until it became useless; and therefore this operation has been nearly abandoned. In a few cases, however, it is the only one capable of being made use of, and therefore, it is necessary to describe the mode of performing it. The most favourable situation to make a new pupil in this mode, is at the upper edge of the iris, for there the weight of this membrane counteracts its tendency to resume its original situation; but unfortunately, this is the worst place in which a pupil can be formed to give the patient good sight, in consequence of its being generally covered by the upper eye-lid, without opening the eye unusually wide.

The only case in which the operation is still considered preferable to others, is that in which the pupil is closed and firmly adherent to the opaque capsule and lens, and at the same time attached to a large central opacity of the cornea. In this case, a pupil made by separating the iris from the ciliary body, will be exterior to the opaque lens, and therefore, the difficulty avoided of removing that body from the eye. The case is rendered still more favourable for this purpose, by the fact, that the lens, in many of these cases, is partly absorbed and diminished in size, by the effects of the previous inflam-

mation; and consequently, the space left at its edges, through which the light may pass to the retina by means of a pupil thus made, is rendered sufficiently ample. There are cases, however, in which this operation is not so eligible as another, even in this state of the parts. When the central opacity of the cornea is small, and sufficient sound iris and cornea are left in any situation for the purpose, the operation of Coretomia, next to be described, is most proper.

The methods adopted for performing the operation of separating the iris from the ciliary body are two; the one being effected by introducing an instrument through the sclerotic coat, the other, through the cornea.

The first is the operation invented by Scarpa, and is thus described by that author.*

"The patient is to be seated and secured as in the operation for extracting a cataract: then with a straight needle, such as I adopt, the sclerotica is pierced on the external angle of the eye, about two lines from the union of that membrane with the cornea. The point is next advanced as far as the upper and internal part of the border of the iris, on the side next the nose; in this situation, close to the ciliary ligament, the needle pierces the upper part of the internal margin of the iris, until its point is just visible in the anterior chamber of the aqueous humour. This step of the operation requires attention, because this part of the anterior chamber is very narrow, and if the point of the instrument advances ever so little before the iris, it must penetrate the substance of the cornea. As soon as the needle is visible in the anterior chamber, it must be pressed upon the iris from above, downwards, from the internal towards the external angle of the eye; as if it were intended to carry the instrument parallel to the anterior surface of the iris, in order that a portion of its border may be detached from the ciliary ligament. The point of the needle must then be depressed, in order to press it upon the

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* Treatise on the principal Diseases of the Eyes, 1801.

inferior angle of the rent, which may be enlarged at pleasure, by drawing the iris towards the temple, and directing the instrument from before backwards, in a direction parallel to the anterior surface of that membrane, and the greater axis of the eye.

"Having produced this separation, if no opaque body appear in the bottom of the eye, the needle may be withdrawn. If, however, any portion of opaque capsule, which had remained after the depression or extraction of a cataract, should appear near the pupil, this opaque portion being broken down with the point of the needle, must be conveyed through the artificial pupil, and deposited in the anterior chamber of the aqueous humour; or, as we have before shown, these membranous flakes may be left to be gradually dissolved and absorbed along with the aqueous humour which is incessantly replenished."

Schmidt performed this operation somewhat differently, although he aimed at producing the same effect. In certain cases, he introduced a curved needle through the cornea into the anterior chamber; and advancing its point to the inner edge of the iris, fixed it in that membrane, and then, by at the same moment withdrawing the instrument and carrying back its point, endeavoured to detach the iris from its ciliary connexion.

But both this and Scarpa's operation, have more recently been superseded by another invented by Reisinger, which I have never had an opportuuity of performing, from the want of the proper instruments, and the difficulty of procuring them in this country. Beer is said, however, to have tried Reisinger's operation very extensively and with great success.

Reisinger's operation consists in separating the iris from the ciliary body, and strangulating it afterwards between the edges of the cornea; to effect which, he uses a very fine double hook, which by a slight pressure of the finger and thumb, is made to resemble a single one.*

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* See Plate Fig. 9.

An incision is first made in the cornea near its outer edge, one and a half, or at most two lines in length, and if possible, three lines (one quarter of an inch) distant from that part of the iris which is to be separated.

"After the incision in the cornea is completed, the eye should be allowed to close for a moment to afford it rest, and prepare it for the subsequent proceedings, unless it has been previously fixed by an instrument.

"The operator should hold the hooked forceps nearly in the same manner as the cataract knife, the points of the hooks downwards, the thumb resting on the flat side of the shank which is facing the operator, and the first and second finger on the flat side of the opposite shank, so that the point of the second middle finger may reach the end of it. The handle must rest against the *radial* side of the first joint of the first finger; the little finger serving to steady the hand.

"The instrument is now drawn along the edge of the cornea, pressing gently and steadily with the convexity of the united hooks against the small incision, in order that the edges of the wound may be gently opened, and the closed forceps insinuated into the anterior chamber; then glide the instrument with the convexity of the hooks against the inner surface of the cornea, as far as the spot where the iris is to be separated; taking care, however, to bring the hooks as near as possible to the ciliary edge of the iris. The forceps are now to be turned, so that the point of the hooks may be directed towards the iris; then let the instrument be opened, so that the two hooks may be at least one line, and not more than two lines asunder; press the convexity of the hooks against the ciliary ligament, sink the points into the iris, and close the forceps, at the same time gently drawing them towards you; by these motions, which must be almost simultaneous, the iris is steadily seized and easily separated. The closed forceps are now to be further drawn out of the eye, the convex edge of the hooks being carefully turned towards the inner surface of the cornea to avoid pricking it. In this manner a considerable part of the iris will be separated, and

a triangular pupil formed, of the size of at least one quarter of the iris, and which will reach the middle of the eye.

"The handle of the forceps is now to be depressed, and as the convexity of the hooks glides out at the upper angle of the incision, withdraw the forceps, together with that part of the iris which has been laid hold of, so as to produce a pretty considerable procidentia iridis. The eye should now be immediately closed to assist the strangulation of the prolapsed iris, by the pressure of the eyelid.

"If the prolapsed portion of the iris should recede, it will generally happen from the incision having been made too large. In this case, it may probably be advisable to cut off the part of the iris which has been separated, and which must again be drawn out; and so combine Coredialysis with Coretomia, to insure an artificial pupil of a proper size.*"

2. Of Coretomia.

A simple division of the fibres of the iris, in such a manner as that their retraction shall leave an opening sufficient for a pupil.

This operation is essentially that originally proposed by Cheselden, but in consequence of its improper application to cases to which it was not adapted, it was for many years abandoned; and is even now little employed in Europe by any other surgeon than Sir William Adams, who successfully revived it a few years since.† In a large proportion of cases it is certainly the best that can be adopted, both for the facility with which it can be performed, and the success of its results. The cases which will be related in the sequel are the best illustrations of the truth of this observation. In all the cases to which it is applicable, the only choice is between

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* Reisinger, in his description of this operation, part of which I have quoted, gives many more minute directions concerning it. I have extracted sufficient to show the nature of the operation, and to do more would unreasonably lengthen this paper. For the same reason I omit describing another mode of performing a similar operation, invented by Langenbeck. and much approved of by Guthrie.

† Practical Observations on Diseases of the Eye. 1814.

this and Coretomia. In this last operation, the cornea is necessarily divided, the aqueous humour escapes, and after this has happened, the incisions are to be made in the iris. The actual performance of one such operation will prove to a surgeon how much more difficult it is than it may appear before hand. Although the exact situation in which he intends to divide the iris be perfectly visible before the section of the cornea, yet the moment that membrane is wounded, and the escape of the aqueous humour allows it to become flaccid, all distinctness of parts is gone. The cornea is no longer transparent, and the part of the iris intended to be cut cannot be seen. If, again, more than one incision is necessary in the iris, the obscurity is still farther increased by the effusion of blood from the first. The pain too, inflicted upon the patient is much more severe, and the danger of subsequent inflammation greater. In Coretomia, however, these difficulties do not occur. The aqueous humour is not evacuated, and the cornea remains perfectly full and transparent until the operation is finished, giving the surgeon a clear and entire view of the parts upon which he is operating. I have now very repeatedly performed the operation in both modes, and have no hesitation in decidedly preferring that of Coretomia in every case in which it can be employed.

The cases to which this operation is most applicable, are,

1. That in which the pupil has been closed by the supervention of inflammation after the operation of extraction, or depression of the cataract, or its removal by the absorbent practice, and where, consequently, the lens is no longer situated behind the iris; the capsule being in some cases left, in others removed along with the lens; the cornea remaining transparent, and the anterior chamber preserving its original dimensions, or nearly so.

2. A less favourable case, but one to which this operation is, notwithstanding, more applicable than any other, is that in which the pupil has been closed by inflammation, the lens and capsule remaining; the lens opaque or transparent, indifferently.

3. A third condition of the eye, admitting of this operation, is a closure of the pupil by prolapsus of the iris; the whole or greater part of the pupil being involved in the cicatrix.

4. Central opacity of the cornea complicated with adhesion of the cornea to the iris; the adhesion including the whole of the pupil, but the central opacity not very extensive, and a considerable space left in some situation between it and the edge of the membrane. This case is still more favourable to the success of this operation, if the lens have been previously removed, or is softened in its texture, or contracted in size.

As Sir William Adams is the author of this operation in its present improved form, I will describe it in his own words.

"The patient being seated, as in the operation for cataract, and the eye being steadied, either by the finger of the assistant who supports the upper lid, or by gentle pressure made with my concave speculum, the iris scalpel* already described, with its edge turned backwards, must be introduced through the coats of the eye, at their external part, about a line behind the iris, and in the transverse diameter of the latter membrane. The point of the instrument should then be made to penetrate through the iris, into the anterior chamber, in a line with its central diameter, and somewhat less than one-third of the width of that membrane, from its ciliary margin. The iris scalpel is then to be carried cautiously through the anterior chamber, towards the inner canthus, keeping its edge in contact with the iris, (in order to prevent the point from piercing the internal part of the cornea,) until it has traversed more than two-thirds of the width of the iris, when it should, with great care, be drawn backwards, almost out of the eye, making the most delicate pressure with the edge of the instrument, against the iris, lest it should be detached from the ciliary ligament. If the division of the iris be not effected to a sufficient extent, during the first effort, the iris scalpel should be again carried forward, and withdrawn in a similar manner.

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* See Plate Fig. 10.

"This is to be repeated as often as may be necessary to effect a division of the iris, to the extent of a third part of its diameter. In my work published in 1812, I directed that two-thirds at least, of the extent of the transverse diameter of the iris, should be divided, in order to guard against the supposed disposition in that membrane, to re-unite; but abundant experience of the favourable results of this operation, which have since occurred in my practice, has convinced me, that no such apprehension need be entertained, and that a division of one-third the extent of the diameter of the iris is sufficient. Indeed, so far is there from being a disposition in the newly-formed pupil to close again after it has been once established, that the very reverse is the case; for the radiated fibres subsequently contract in a greater degree, from delay; whereby the artificial pupil is proportionably enlarged.* In the species of case now under consideration, an almost immediate contraction of the radiated fibres of the iris, usually takes place, after that membrane has been divided, which produces a new pupil, of a sufficient size, for all the purposes of vision."

The most difficult part of this operation is the division of the iris, which it is impossible to effect without an instrument possessing the keenest edge. To obtain a good iris knife, in this country, is no easy matter, and this difficulty presents the greatest obstacle to this mode of operating.

This operation is most easily performed in cases where no lens nor capsule remains; as after extraction or depression of cataract, the first of this class; and to these cases it is appropriate without any modification.

In the second case, closure of the pupil with adherent capsule and lens, the operation is rendered more complicated and difficult. Here we have not only a new pupil to make, but to remove the lens and capsule; for even if the lens be transparent, it is necessarily wounded in the operation, and consequently becomes opaque. In such cases, the lens is

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* Repeated observation enables one to vouch for the correctness of this remark of Sir W. Adams.

fortunately, in most instances soft and easily divided. The operation is then to be begun and continued as has been already described, until the iris is about to be divided; when we must endeavour to make the opening larger than in the other case, as it is more likely to close at its angles. At the same time the lens must be cut into, and divided, as much as possible, into fragments, which must be brought into the anterior chamber. This cannot, however, be entirely effected at the first operation; but the principal object then to be attained, is to make the new pupil. A second operation is generally necessary, in order to effect the removal of the lens and capsule; which may be done with the needle, as in soft cataract, in the mode now usually adopted. If, however, the pupil have not been made sufficiently large at the first operation, the iris knife must be used in the second, in order to complete this object, as well as remove the remaining portions of the lens.

If we have any reason to suspect, in such a case as we are now considering, a hard lens, so hard as not to admit of division in the manner described; then this operation is not applicable, and the case must be attempted by Corectomia.

3. The third case enumerated as requiring Coretomia, consists in the one last described, complicated with adhesion of the iris to a central opacity of the cornea; the opacity not considerable in extent. There is, in these cases, even if the lens remain, often space enough between its edge and the ciliary body, for a pupil in that situation to be useful: and as in many of these cases, the lens is reduced in size, in others absorbed, as when it occurs from accident in which the lens is wounded, still more room is obtained for the passage of light through the new pupil.

The operation is then to be performed exactly as in the first case, except that, instead of the incision being made across the centre of the iris, it must be effected opposite to the most transparent part of the cornea, and of sufficient extent for the purpose in view.

4. In the last case, *closed pupil from prolapsus of the iris*, we have generally an opportunity of making the new pupil in the centre. The plan of operation is the same as in the first case, and as the fibres of the iris are here on the stretch, they may be divided more easily than in any other instance. Under these circumstances, the lens being necessarily wounded, must at the same time be depressed; or if sufficiently soft, divided into fragments, and brought forward into the anterior chamber. If a second operation be necessary to complete this object, the remains of the lens may be either extracted through a small opening in the cornea, or still farther broken up by the needle.

Another mode of effecting the operation of Coretomia, is by means of the scissors instead of the knife; an operation invented by Professor Maunoir, and adopted by Scarpa. The scissors are made so small and delicate, as to be easily introduced through an incision in the cornea, with their blades forming a large angle with the handles.* The upper blade, or that which is intended to pass through the anterior chamber between the cornea and iris, terminates in a small button. The lower one, with which the iris is to be pierced, has a very sharp lancet point. The operation is thus described by Scarpa.

"An incision is made in the cornea at its lower or lateral segment, as may be most convenient, of *half the extent* of that which is usually made for the extraction of the crystalline lens. Through this small opening in the cornea, the scissors are to be introduced closed, with the flat part in a line parallel to the transverse diameter of the iris; and as soon as the point of the instrument has advanced near to the great margin of the iris, that is to say, nearly opposite the small incision made in the cornea, it is gently opened and inclined in such a manner that the inferior pointed blade may perforate the

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* A delineation of this instrument is given in S. Cooper's First Lines of the Practice of Surgery.

iris, and run along the posterior surface of that membrane, until the small button of the upper blade reach the part where the cornea and sclerotica unite. The iris is then to be divided in its transverse diameter, by a single stroke passing as nearly as possible through its centre. This incision being executed, another is to be expeditiously made, so far diverging from the first, that the two incisions may form in the centre of the iris a triangular flap of the figure of the letter V, the apex being precisely in the centre of the iris, and the base near its greater margin.—On opening the eye operated on, five or six days after, the apex of the triangular shred is found to have retracted towards its base, leaving in the middle of the iris an artificial pupil of the form of a parallelogram."

By means of the scissors, also, an operation may be effected, according to Scarpa, without injury to the transparent lens or its capsule, in the case of a "contraction of the natural pupil occasioned by the iris and pupil being stretched towards some point in the cornea. This happens, in general, in consequence of prolapsus of the iris through ulcers of the cornea." In this case, the lens and capsule often preserve their transparency, and the cornea is only opaque immediately around the adhering point.

For this operation, it is necessary to have the scissors of Maunoir made with the points of each blade terminating in a button. Then the operation having been commenced as in the first instance, "one of the blades, by means of the small button, is introduced within the contracted natural pupil, and conducted behind the posterior surface of the iris, until the other blade, defended in the same manner, has reached the confines of the cornea and sclerotica. The iris is then to be divided in the form of the letter V, without at all injuring either the capsule or the lens, both of which have preserved their transparency."

How far this operation is practicable without injury to the lens or capsule, I cannot say, as I have never performed *it*; but I confess, I somewhat doubt the possibility of carrying

an instrument between the iris and capsule, without lacerating the latter membrane. If practicable, the operation is certainly very beautiful.

If a hard lens be supposed to be present, Maunoir operates with his scissors in a manner similar to the first case, but divides, with one stroke of the instrument, the iris, capsule and lens, which is afterwards extracted through the incision in the cornea, either by means of a forceps or scoop, or simply by slight pressure on the eyeball.

3. Of Corectomia.

The third mode of performing the operation for artificial pupil, differs materially from either of the others, and consists in removing a portion of the iris, so as to leave an opening in it, sufficiently large for a pupil. This operation was invented by Wenzel, and was adopted in consequence of the disposition to contraction, supposed to exist in a simple division of the fibres of the iris. In the proper cases, this disposition, it is now ascertained, forms no obstacle to the success of the latter operation, but in certain other cases, Corectomia is the best that can be chosen. The state of the organ to which it is adapted, are,

1. A central opacity of the cornea, eclipsing the pupil; the iris, capsule and lens sound, and sufficient transparent cornea, in some part of its edge, to admit of a new pupil.

2. A sufficient portion of the cornea being transparent, but the pupil constricted and adherent to the capsule and lens; this last part remaining of its full size, and supposed to be hard.

For the first of these cases, Mr. Gibson has invented a very ingenious operation, described in his excellent work on artificial pupil.* The author's description of the operation is as follows:

"The most favourable situation for the transparent part, (so far as the facility of the operation is concerned,) is to-

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* Practical Observations on Artificial Pupil. 1811.

wards the outer angle of the eye, or towards the lowest part of the cornea.

"In describing" the operation, "I shall select a case, in which the transparent part of the cornea is situated towards the outer angle of the eye. I shall suppose, also, that its extent is one-third of the diameter of the cornea: although an opacity, leaving a much larger transparent surface, will destroy what may be termed useful vision.

"The first step of the operation is to secure the eyelids, as in the operation for extracting a cataract. A puncture is then to be made in the cornea, within a line of the sclerotica, to the extent of about three lines. All pressure is now to be removed from the eyeball, and the cornea knife gently withdrawn. The consequence of this is, that a portion of the aqueous humour escapes, and the iris falls into contact with the opening in the cornea, and closes it like a valve. A slight pressure must now be made upon the superior and nasal part of the eyeball, with the fore and middle finger of the left hand, till at length by an occasional and gentle increase of the pressure, or by varying its direction, the iris gradually protrudes, so as to present a bag of the size of a large pin's head. This protruded portion must be cut off with a pair of fine curved scissors, and all pressure at the same time removed: the iris will then recede within the eye, and the portion which has been removed, will leave an artificial pupil, more or less circular.

"The principal points to be attended to, in this operation, are, to enter the cornea knife at a proper distance from the sclerotic coat; not to make the puncture too large; and to snip off the whole of the protruding bag at once, and as soon as can be effected. For, immediately, when an opening is made in the bag with the scissors, the aqueous humour escapes, the iris retires within the eye, and cannot be again protruded by the same means, because the expulsion of that membrane depended upon its being in an entire state. If this occurrence should take place, and the artificial opening should not be large enough to form a serviceable pupil, the

iris may be again drawn out of the eye, by means of a small hook."

It should be considered a principal object, in this operation, to remove the margin of the original pupil, so that the old and new one may be formed into one. If this be not effected by the first excision of the iris by the scissors, the margin should be drawn out by the small hook, and then cut off as before directed.

The most beautiful part of this excellent operation, is the preservation of the capsule and lens free from injury, an object which can hardly be attained by any other mode of operating.

In this condition of the eye, the operation of Coretomia may also be made use of, but necessarily sacrifices the lens, and therefore, is inferior to Mr. Gibson's method. It differs from that already described as Sir William Adams' operation, only in dividing a portion of the iris on one side of the pupil, and carrying the incision into that opening, instead of making it involve a central portion of the membrane.

2. The second case, requiring the operation of Corectomia, was stated to be, a constricted pupil, adhering to a capsule containing a hard lens. In this case, Corectomia is not applicable, from the difficulty of dividing the lens, when in such a state.

The proper mode of operating under these circumstances, is, to excise a central portion of the cornea and extract the lens. For this purpose, a section of the cornea must first be made, as for extracting the cataract; the operator then lays hold of the constricted centre of the iris with a pair of fine forceps, and raising it gently, cuts it away with a flat curved scissors, removing as large a piece of the iris, as will leave a sufficient pupil. The lens may be afterwards readily extracted through the new pupil.

Wenzel, who invented the operation of Corectomia, performed it somewhat differently. He made his incision into the iris, with the cornea knife, in its passage across the eye, in making the first incision. A triangular or crescentic flap of

the iris was thus made, which was afterwards removed by the scissors, leaving a central pupil. This mode of operating will succeed very well in appropriate cases, but is not performed with as much facility as the last.

I have now described the different operations for artificial pupil, and the various states of the eye to which each is applicable. It will be useful to recapitulate these states, and the modes of operation appropriate to them.

1. Central opacity of the cornea, the eye otherwise sound.

Operation. Corectomia; Mr. Gibson's method. Or in- instead of this, Coretomia, by dividing the edge of the iris with an iris knife.

2. Cornea sound, but the pupil closed; the lens having been previously removed.

Operation, Coretomia; Sir W. Adams' method.

3. Central opacity of the cornea, with adhesion of the cornea to the iris, and of this to the capsule of the lens.

Operation. If the opacity be large, Coredialysis; if it be small, Coretomia.

4. Cornea sound, or sufficiently transparent at or near its centre; but the pupil closed and adherent to the capsule and lens.

Operation. If the lens be soft, Coretomia; if it be hard, Corectomia.

5. Pupil closed by prolapsus of the iris, and that membrane stretched towards the adherent point.

Operation. Coretomia.

There is one condition of the eye, in which vision is lost by closure of the pupil, in which we are told by Mr. Guthrie, that it may be restored to a considerable perfection, without resorting to any operation for the formation of a new pupil. It is a case, in which the pupil has been nearly closed by inflammation, but where its diameter is " not less than one line, in some instances more; and although the edge of the iris is adherent, so as to render it immoveable; still, the lymph deposited behind it seems to be laid upon the capsule of the lens, rather than to form one part with it; the iris itself, even

in its smaller ring, is hardly, if at all discoloured; or a slightly greenish tinge may be discovered in one which is naturally blue, and a deeper tinge of colour in one that is naturally brown.

"In such cases, the motion of the iris appears only to be prevented, in consequence of its attachment; and the object of an operation seems to be, the freeing of the attachment, and the removal of the opaque parts. This may be accomplished by the introduction of a needle behind the iris, so as to separate it from its attachment; and subsequently to open into the texture of the lens; for, as the passage of the needle behind the iris necessarily renders the lens opaque, if it be transparent, its removal becomes necessary to vision. In this operation, the iris need not be divided, except at any part where it may be too firmly attached to be separated, and the belladonna must be applied immediately after the operation, to dilate the pupil, and separate it more permanently from the parts behind, in which state of dilatation it must be retained, until the lens is dissolved.

"In some cases, the iris, although separated, will still be immoveable, from the cohesion of its fibres one to another, from the effusion of coagulable lymph in its posterior part, although this may not be strongly indicated by a change of colour. If after the iris be detached, the pupil is likely to be too small, the point of the needle must be advanced through the pupil, and the inner edge of the iris divided as far as may be necessary, to insure a pupil of a proper size. In some instances, the operation may require repetition to effect the removal of the lens."

The number of cases, to which this mode of operating is applicable, must be extremely small; and Mr. Guthrie does not allude to any, in which it has been successfully performed. In general, where sufficient inflammation has existed to close the pupil, the posterior surface of the iris is loaded with lymph, and its fibres immoveable. Still, a few cases may occur, in which the operation may be well worthy of trial, and therefore, I have extracted the author's account

of it from his work. I shall make use of the first fair opportunity which occurs, for the experiment.

After treatment. Much depends, in the success of operations for artificial pupil, upon the management of the patient after the operation. Several of the textures of the eye, more or less prone to inflammation, have been wounded, and that in an organ which has already suffered from disease. Every means, therefore, calculated to prevent inflammation, or subdue it, if it come on, must be made use of. The eye should be covered with nothing but a light compress of linen, which may be kept constantly wet with cold water. The patient should be put to bed, immediately after the operation, in a chamber from which the light is sufficiently excluded to make him comfortable. If any pain should come on, after that induced by the operation has subsided, he should be immediately and copiously bled; and to provide for this emergency, an assistant should be at hand during the night after the operation. The bleeding must afterwards be repeated, or cupping, or leeches, substituted, according to the degree of inflammation. A purgative should have been given the day before the operation, and another should be exhibited on that following it. No reason exists why the eye should not be examined on the day after the operation, and it is essential to do so, to ascertain the condition of the organ. Inflammation sufficient to defeat the operation, may have come on within the first 48 hours, without sufficient pain for the patient to make much complaint. On the other hand, little inconvenience will be felt from examining the eye, if it have not been bandaged up, and the chamber been unnecessarily darkened. This observation is equally true after the operation for cataract, as after that for artificial pupil. We derive also another advantage from keeping the patient in such a quantity of light, as he finds not disagreeable to him; that no undue irritability of the eye remains, when he first begins to use it; and he is enabled to do so many weeks sooner, than if he had been shut up in a perfectly dark room, after the operation. In addition to the remedies already mentioned, the antiphlogistic

regimen generally must be rigidly pursued, as long as any tendency to inflammation remain in the eye. If none have taken place, in about a week, the patient may leave his room, and screen the eye with a common shade, gradually accustoming it to light as it gains strength.

I shall now proceed to relate a few cases, in which I have performed operations for artificial pupil, to illustrate the remarks made in the preceding paper. The two first cases are interesting, not so much for the advantage derived from the operations by the patients, as from the light they throw upon an important question in such cases. In performing such operations, we are accustomed to consider very long continued blindness as one of the circumstances most unfavourable to success. It is generally supposed that the retina, when deprived of its ordinary stimulus of light, for a great length of time, will entirely lose its power, and that if we succeed in removing the causes which prevent the light passing to the bottom of the eye, the patient will still remain blind. The following cases, in one of which, after the lapse of sixty, and in the other, forty years, the retina was still found capable of performing its functions, are striking proofs of how much may be done in the relief of blindness, even under such unfavourable circumstances.

Case II. In the month of November 1821, Mr. R. Wortendyke, aged sixty three years, a farmer from Sussex county, New Jersey, applied to me, blind of both eyes. When he was three years of age, he received a wound in the right eye from a fork, which penetrated the cornea near its lower margin, pierced the iris and wounded the crystalline lens. The consequence was, opacity and subsequent absorption of the lens, and adhesion of the iris to the lower edge of the cornea. In this situation I first saw the eye, sixty years after the accident happened. The pupil was extremely small, and drawn down to the edge of the cornea; but adhering only at this point, and free at its upper edge. The lens had disappeared, and the capsule remained behind the pupil, much thickened

and opaque. The patient could see light with this eye, but was totally unable to distinguish objects.

The left eye became blind from an injury of much later date. At the age of fifty-nine, four years previously to my seeing him, Mr. Wortendyke received a severe blow upon this eye, from an ear of wheat. In consequence, violent inflammation, sloughing of the cornea, protrusion of the iris, and total destruction of vision took place. The eye recovered from all the acute symptoms, but the greater part of the cornea remained densely opaque, and the iris partially adherent to it.

The patient applied to me with the expectation of having some operation performed upon this eye, as he had long since given up all hope of receiving any benefit to the other. The right eye, however, was evidently in the best situation for successful operation, and the only unfavourable circumstance about it was, the great length of time which it had remained blind. I determined, however, to make an attempt upon this eye, although it was not without difficulty that the patient could be induced to consent to it; so impossible did he consider it, that any operation upon it should succeed.

The operations which it required were sufficiently simple. It was first necessary to remove the opaque capsule. This was effected without difficulty by the means of Saunders' needle. When the eye had recovered from this operation, the patient had some degree of vision, but the pupil was so small and distant from the centre of the cornea, that the sight was extremely imperfect. It was necessary therefore, to perform some operation for artificial pupil. For this purpose, Sir W. Adams' iris knife was introduced, about two lines behind the cornea, and after puncturing the coats of the eye, its point was pushed through the iris into the anterior chamber, about two lines from its ciliary margin: the point of the instrument was then directed towards the small pupil already described, and all that part of the iris was divided, which lay between this pupil and the point where the instrument was introduced. The iris immediately retracted, and left a large

oval pupil, with its transverse axis running obliquely across the eye. The patient recovered, with very little supervening inflammation, and the pupil remained full as large as the natural one. By degrees he gained so much sight, that he was enabled to distinguish the countenances of his friends, and attend to his usual avocations on his farm. When I last saw him, he had still farther improved; but although his sight was sufficiently good for all ordinary purposes, he was unable to read. The success of the operation, however, was fully as great as could have been expected, under the circumstances. The appearance of the pupil is shewn, before and after the operation, in the accompanying plate, fig. 1 and 2.

In this case, although the eye operated upon had been blind so great a length of time, the other had continued good until within a few years; and the use of the one eye, might be supposed to have prevented the loss of function in the other. But in the following case, where the blindness was complete in both eyes, although the operation was not equally successful, another proof is afforded, of the propriety of attempting operations upon eyes which have been blind a great number of years.

Case III. Martha Hanson, aged forty-four years, was admitted into the New-York Eye Infirmary, March 6th, 1822.

When four years of age, she was attacked with violent inflammation of the eyes, which closed both pupils and rendered her totally blind. When she applied at the Infirmary, she could merely perceive a little light with the right eye; and having become blind at so early a period, she was entirely destitute of any ideas which could have been communicated by the sense of vision. In this respect, she was in the situation of a person born blind. The pupils, as was stated, were both closed, and filled with lymph, but the iris otherwise apparently healthy in each eye, and the cornea sound.

The operation was performed in the following manner:

A section of the cornea was made, as for extraction of cataract. The central adherent portion of the iris was then

raised by the forceps, and cut off by means of a curved scissors. Under this was found a dense layer of lymph, adhering firmly to the capsule of the lens, and about a line in thickness. This, together with the capsule, was also removed by means of Gibson's iris forceps. The lens then appeared, opaque and hard, and was extracted without difficuly. A large round central pupil was left, perfectly clear and brilliant. Upon passing the hand before the eye, the patient immediately exclaimed, that she saw something moving; and we were satisfied that the retina had not entirely lost its functions by disease.

Considerable inflammation followed an operation of so much severity; but by the persevering use of general and local blood-letting, with the rest of the antiphlogistic regimen, this was eventually subdued. The greatest difficulty occurred, in enabling the eye, so long unaccustomed to light, to bear its admission; but, by degrees, this also was effected.

The first experiment, to ascertain the extent of her vision, was made by the matron, who standing at her side and holding a mirror before her, asked her if she saw her face; explaining at the same time the effect of the glass. She instantly cried out, and apparently with much alarm, that she saw herself double, mistaking the image of the matron's face in the glass, for her own.

Her sight now improved from day to day, and she was gradually taught to know and distinguish a number of objects. She learned to distinguish circular from angular bodies, several of the more striking colours, and some of the most familiar objects about her apartment. She seemed to have no idea of distance; and when told to touch an object, although she would direct her hand to it correctly, she could not judge how far it was from her.

For six weeks the sight continued improving, and she was daily acquiring knowledge through the medium of this new sense; but at the end of this period, she began to complain of her sight becoming more obscure; and on examining the eye, a small portion of lymph was seen on the lower margin

of the new pupil, with extremely fine bands of lymph running thence to the upper margin. These increased daily, and as they increased, the pupil became more contracted, until it was entirely closed, and the patient was reduced to her former state of perfect blindness.

Case IV. Peter Simpson, aged forty-two years, in the month of July 1822, received a slight blow, from a hook attached to a pulley, upon the right eye, which caused immediate blindness. He had lost the left eye several years before. In consequence of the last accident, he became a patient of the New-York Hospital, whence he was discharged, after the expiration of two months, having recovered sufficient vision only, to distinguish light from darkness. During this period he had suffered severely from the violent inflammation which followed the accident.

In September 1823, he was admitted a patient into the New-York Eye Infirmary, with his eye in the following condition. In consequence, apparently, of a rupture of the cornea, from the blow he had received, the iris had prolapsed, was drawn over to the inner side of the eye, and adhered to that edge of the cornea, totally obliterating the natural pupil; but leaving an open space through the iris, at the inner edge of the cornea, which would have been sufficient for good vision, if that membrane had been transparent. Unfortunately, however, the injury had so far rendered this part opaque, as nearly to make the pupil useless, and it was still farther impaired by the presence of an opaque lens behind it. In consequence, the patient's vision was totally insufficient to enable him to gain a livelihood, although he could, without much difficulty, find his way in the streets. From this inability to work, he had for the previous year, been a tenant at the Alms-House. From this description, it will be evident, that the fibres of the iris were on the stretch, drawn towards the inner canthus, and also upwards and downwards, by their adhesion to corresponding points of the cornea. The case was, therefore, evidently favourable for the operation of simply dividing the fibres of the membrane; and as the

cornea was transparent in its centre, the most advantageous situation was afforded for a new pupil.

Accordingly, the operation was performed upon that principle. The iris knife of Sir W. Adams was introduced through the sclerotic, at the usual situation for the introduction of the couching needle, the back of the knife being held towards the operator. When its point had arrived about two lines from the external edge of the iris, it was pushed forward through the membrane, and then carried on in the anterior chamber, as far as possible, towards the inner canthus of the eye. The iris was next divided by a back stroke of the instrument, in the motion of withdrawing it; the fibres immediately retracted, and left a large pupil, of a triangular form, opposite to the centre of the cornea.*

It was now discovered, through the new pupil, that the lens had been partially dislocated by the accident, and thrown towards the inner canthus of the eye, remaining attached opposite to the junction of the cornea and sclerotic; but its external edge projecting so far behind the new pupil, as to render it useless. It was, however, deemed most prudent to defer the operation for its removal to another time.

Little inflammation followed the operation; and in a fortnight, the patient was able to bear the full light with no other screen than a common shade.

In the month of November following, another operation was performed, for the removal of the opaque lens. A puncture was made through the cornea, near its inner inferior margin, and a section made, corresponding to about one-fourth its circumference. The lens, already softened in texture, and somewhat reduced in size by its exposure to the aqueous humour, immediately glided through the opening, and left the new pupil perfectly clear and bright. This slight operation was immediately recovered from, without any untoward accident. After the expiration of a few weeks, the

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* See Plate, Fig. 4.

patient returned to his occupation as a sawyer, and has ever since gained his own subsistence by his daily labour. He can now see so well without glasses, as to pick a pin from the floor. Having never learned to read, the accuracy of his sight cannot be tested in that particular; but he can distinguish the difference of small letters, and trace them accurately.

Case V. John M'Gilvra, aged thirty years, from Schenectady county, was received into the Infirmary, October 27th, 1824. The right eye was completely blind from organic amaurosis, and had been in that situation about six years. The left had been deprived of vision, by an accident which had happened sixteen years before. The eye had been wounded by a thorn, which had torn the cornea entirely across, in its transverse diameter, wounding at the same time the iris and capsule of the lens. In consequence, when these wounds healed, the pupil was closed, and the cornea, iris, and capsule united in one firm cicatrix. The upper and lower portions of the cornea were perfectly transparent, and the iris apparently sound. These appearances are more fully shown by the annexed drawing.* The patient was deprived of all useful vision, and could only perceive the motion of objects before him, or their interposition between him and the light.

Three operations had been performed upon the left eye, by an eminent surgeon in the northern part of the state, the exact nature of which I could not learn; but they had the effect, as was afterwards proved, of destroying the lens, and thus rendering the subsequent operation less complicated.†

In this case, it was evident, that a very favourable situation was offered for a new pupil, in the lower half of the iris. The fibres of this membrane, being adherent at opposite points,

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* See Plate, Fig. 7

† It is perhaps a matter of doubt, whether the removal of the lens was the effect of absorption, excited by these operations, or by the original injury: either being competent to this effect.

viz. at its ciliary margin below, and to the firm cicatrix above, it might fairly be calculated, that upon a simple incision, they would retract sufficiently to leave a good and permanent pupil. Accordingly, on the 1st November, the operation was performed, in a manner similar to that described in the last case. The iris knife was introduced through the sclerotic, somewhat below the transverse diameter of the eye, its point pushed through the iris about a line from its ciliary junction, and after carrying it forward to a corresponding point on the opposite side, the membrane was divided by a gentle back stroke of the instrument, as it was withdrawn. The fibres of the iris immediately retracted, and left a large pupil, such as is shown by the drawing.*

The patient soon recovered from the operation, but although his sight was somewhat improved, it was still insufficient to answer any useful purpose. On very close examination, after the organ could bear exposure to a full light, I perceived some minute portions of the capsule of the lens, which obstructed the passage of the light through the new pupil. On the 20th November, these were removed by a second operation, so simple as not to require description. Still, the degree of vision gained was not very material, for several days after the eye could bear full exposure to light; and I had almost despaired of eventual success in the case. About two weeks after the last operation, however, the sight suddenly began to improve, and gained so rapidly in the course of the following fortnight, that with proper glasses the patient could read with facility the title page of a book. The long disuse of the organ, in this case, seemed at first to have rendered it incapable of performing its functions, after the obstacles to vision had been removed; but, by degrees, it regained its powers. The patient was discharged from the Infirmary early in December.

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* See Plate, Fig. 8.

In March following, four months after the last operation, I received from him the following letter.

Princetown, March 4th, 1825.

DEAR FRIEND,

With much pleasure I inform you that my eyesight has gained so, that I can see to read small print; as small as that of a pocket bible. My health is good, and I hope you enjoy the same blessing. I return you my humble thanks for your kind attention to me.

Yours with respect,

JOHN M'GILVRA.

DR. DELAFIELD.

The success experienced in this case, was certainly more than I expected. It was not the first instance, in which I learned not to despair of eventual success, when sight was not immediately recovered, after operations on the eye. A more striking one occurred in the case of a young lady, upon whom I operated for cataract, about eighteen months since.

The cataract, which proved to be soft, was removed by lacerating the capsule, loosening the texture of the lens, and placing a portion of it in the anterior chamber. In two months after the operation, the whole of the lens and capsule were absorbed, and the pupil perfectly clear and bright; but the eye was useless, and the patient could distinguish the form of no object with it. It continued in this situation, with very little change, more than eight months; after which, it began rapidly to improve, and when I last heard from the patient, the sight was so perfect, that she could read and sew without glasses. I do not recollect any author who notices this important fact; although it can hardly have escaped the observation of those who have had extensive opportunities of operating on the eye.

CASE VI. John Thompson was admitted into the New-York Eye Infirmary, May 25th, 1824. He had been the subject of severe iritic inflammation, which had closed both

pupils. In the right eye, the blindness was complete, the only remaining aperture in the iris being filled with a mass of lymph. In the left, a small portion of the pupil remained free, and gave the patient sufficient sight to enable him to find his way, without a guide, about places to which he was accustomed. The situation of the right eye was most unfavourable to the success of an operation, but as the other was of some use, it was deemed most prudent not to risk any operation upon it, until after an experiment upon the worst eye. The operation of Coretomia, by Sir W. Adams' method, was therefore performed upon the right eye, and a large clear pupil made in the centre of the iris, of an elliptical form.* But although the operation succeeded perfectly, as regarded the formation of a good pupil, it was of no advantage to the patient. The eye proved entirely amaurotic, and remained perfectly blind. The case, however, was a striking illustration of the excellency of this mode of operating. The pupil was made with great facility, and remained afterwards permanent, without the least disposition to contraction. A drawing of it, made from recollection, will give a better idea of the appearance of the eye after operation, than any description I can give.†

The sketch, which I have now presented, of the various circumstances necessary to be understood, in performing operations for artificial pupil, is necessarily extremely condensed, in order to bring it within limits proper for a periodical journal. It is sufficient, however, to enable those who are studying this subject, to exercise their own judgment in the selection of proper modes of operating; and as the works containing full accounts of these operations, are not generally accessible in this country, I trust that the labour expended in preparing this communication will not be entirely useless.

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* Several operations had been performed upon this eye, the nature of which I could not learn; but their effect had been, the entire removal of the lens.

† See Plate, fig. 3.

EXPLANATION OF THE PLATE.

Fig. 1. R. Wortendyke's eye, before the operation for artificial pupil, but after the removal of the opaque capsule of the lens. The original pupil is seen drawn down and adhering to an old cicatrix, and so small as to be useless.

Fig. 2. The same eye after the operation.

Fig. 3. The central artificial pupil made in J. Thompson's eye.

Fig. 4. The result of a similar operation on the eye of P. Simpson.

Fig. 5. The appearance of the pupil in the best eye of Steinberg, alluded to in Case I, after it had been dilated to its fullest extent by extract of stramonium. The very minute dark line, between the upper edge of the pupil, and a deposite of white lymph lying within it, appears to be the only situation, in which light can pass to the retina.

Fig. 6. The same eye, before the application of the stramonium.

Fig. 7. J. M'Gilvra's eye, before the operation; a dense cicatrix across the centre of the cornea, and the only remains of the pupil shown by a few dark lines in its original situation.

Fig. 8. The same eye, with an artificial pupil formed in the lower half of the iris.

Fig. 9. a. Reisinger's double hooked forceps.

b. A side view of a single limb of the instrument.

Fig 10. Sir. W. Adams' iris knife, resembling a very small scalpel, cutting only on one edge, and extremely sharp at its point.

Art. II. Observations *on the* Best Method *of diminishing and extracting the head of the* Fœtus. By Alexander H. Stevens, M. D., one of the Surgeons of the New-York Hospital.

In the following paper I propose to inquire into the best method of diminishing, and subsequently extracting the head of the fœtus in any given case where the former or both of these operations are admitted to be necessary. When there are unequivocal indications of the death of the fœtus, and the labour is lingering, in consequence of a disproportion between the relative size of the head and the pelvis of the mother; a preternatural ossification of the head of the fœtus, or some other causes; it does not seem to admit of any doubt, that the evacuation of the contents of the head is to be effected in every instance, provided it can be done without pain or other injury to the mother, and in some cases even without these limitations. The cutting scissors that are commonly employed for the purpose of making an opening into the head, appear to me to be a very ill-contrived instrument, not well adapted to make a clear cut through the scalp, or to be introduced into the vagina without unnecessarily exposing the mother to injury. I have divided the scalp with a large spear-pointed gum lancet; and in another case, with a scalpel, of which all the edge except that within half an inch of the point was covered with a slip of linen wound spirally around it. Either of these instruments may be thus introduced safely and conveniently, upon the fore-finger of the left hand, and made to divide whatever soft parts may cover the presenting bone. If the vertex present, it will be proper, for reasons hereafter to be mentioned, to avoid cutting directly upon it; with this exception, the sutures are the most eligible places for making our incisions, for this obvious reason, that we reach the brain without dividing any other than soft parts. Scarcely any case will occur in which an opening into the head is called for, in which it will not be proper to assist the expulsion of

the brain, and advance of the head at least, by the introduction of one or more fingers into the artificial opening thus made. It will often happen, however, that the exhaustion of the patient, or other circumstances, render it necessary or desirable that the head of the child should be diminished without loss of time. In what way may this object be most conveniently effected? accident suggested to me the use of a hollow cylindrical tube, not unlike a candle-mould, with a portion of its circumference cut in the direction of its axis, and turned up.* I am indebted to my ingenious pupil, Mr. J. I., now Doctor Graves, for the annexed drawing of the instrument.

This instrument is introduced with the greatest ease and safety, and at each introduction will discharge an ounce or more of brain. The simplicity of such an instrument renders unnecessary any explanation of the mode of using it, or its advantages. The contents of the fœtal head may be extracted through one of the orbits of the eyes, through the mouth, occipital portion, or vertex, without the slightest injury to the mother. But it sometimes happens, that beside diminishing the fœtal head, it is necessary to exert some degree of traction, in order to its delivery. In what way may such traction be most safely and conveniently made? "Sooner or later then, according to the state of the mother, it will be necessary that we should begin to make our efforts to ex-

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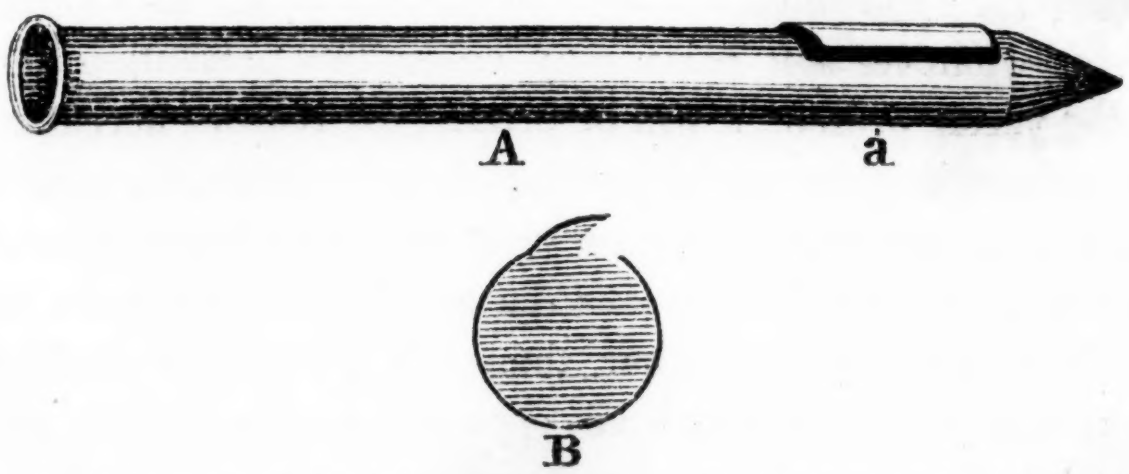
* The length of the instrument should be twelve inches, and the diameter one inch.



A. Side view of the instrument. B. Section at point a.

tract the head of the child; and taking care in the first place, to remove cautiously any loosened or sharp pieces of bone; I have been accustomed to avoid using the crotchet, or any kind of instrument, till I have tried what advantage was to be gained with my fingers. With this view, introducing the fore-finger of either hand, armed with my glove or some other such contrivance, into the opening in the head, and then bending it in the shape of a hook. I have pulled with all the force it enabled me to exert, repeating my attempts at intervals, when the natural efforts of the mother returned. Should the head of the child be so high in, or above the superior aperture of the pelvis, or this be so much distorted as not to admit of my giving this kind of assistance, or should it be unequal to the purpose, I carefully introduced the crotchet, guided by my left hand, into the opening in the head; and fixing the point of the hook as far from the edge of the bone as its curvature will allow, I begin to pull moderately by the handle held in my right hand, guarding at the same time the hook of the crotchet with the fingers of the left, lest it should happen to tear away the bone, or slip. If, on trial, the crotchet be found firmly fixed, but the head be too much impacted in the pelvis to be brought down with the force first used: that is, supposing the force required to extract the head be equal to 10, and the force which can be exerted by the crotchet not to exceed 5; no other purpose can be answered by striving too earnestly with the force which cannot be made to exceed 5, except tearing away the piece of bone in which the crotchet may be fixed, which does not facilitate the operation. We are to be satisfied with the steady exertion of the force 5, which being continued, will at length be found sufficient for our purpose; the resistance gradually diminishing, and the force 5 remaining. In the repetition of our attempts to extract the head, which must be made at intervals, should the bone in which the instrument was fixed, be loosened and come away, wholly or in part, the crotchet must be again introduced and fixed in another place, and the same method of proceeding followed; remembering

also when we extract, to pull with some variation in the direction, but always in the line of the cavity of the pelvis. In almost every case of difficulty, the principal obstacle or cause of the difficulty, is at one particular part of the pelvis, and when the head has passed that part, there is no farther occasion for using much force; and we are afterward to proceed very circumspectly, that there may be no laceration or injury done to the parts of the mother, internal or external. The principle I wish to impress on the minds of those who may be embarrassed with difficulties of this kind, is, that time is equivalent to force, and that no advantage will be obtained by pulling away small pieces of bone, except such as were loose, and likely in their passage to injure the soft parts of the mother, or by acting hastily or violently. On the contrary, when the instrument is once firmly fixed in a part of a bone which affords a good hold, I have been cautious not to tear it away by pulling rashly, considering that, as something like breaking the instrument with which I was performing the operation. Where the resistance has been very great, often making my first efforts with all the force and skill I could safely exert without success, leaving the crotchet fixed, I have desisted for an hour or longer, and then renewed my attempts." These observations of Dr. Denman may be considered as a fair exposé of the practice recommended by our best writers. No one who has not witnessed or experienced the embarrassment arising from the breaking of the fœtal bones, the slipping of the crotchet, or the constant exposure of the vagina to be wounded by the instrument, will duly appreciate the superior advantage of the method I am about to recommend, viz.: *to hook the crotchet in the falx of the dura mater;* this membrane is abundantly strong enough to bear the application of any force that can with propriety be applied. There is no slipping, no splintering of bone, no displacing of the head from the axis of the pelvis. On the other hand, the vertex is steadily maintained in its place, and by twisting the crotchet, the bones are gathered around it as a centre; and the head may be made to rotate in any direction that may be required.

ART. III. *An Account of the* TOPOGRAPHY, WEATHER, *and* DISEASES *of* NASSAU, *Island of New-Providence, Capital of the Bahamas, West Indies.* By P. S. TOWNSEND, M. D. of New-York.

[Continued from page 78.]

DISEASES.

	Mar	Apr.	May	June	July	Aug.
Abortio				1		
Amenorrhœa						1
Anthrax			1		1	
Apoplexia				1		
Asthma			1		1	
Cephalalgia				2	2	
Chorea Sancti Viti					1	
Convulsio	1			2	1	1
Constipatio					1	
Coup de Soleil				1		
Dysenteria	1	1	1	8	8	3
Diarrhœa					2	
Dysmenorrhœa	1	1		2		1
Dyspepsia		1			1	
Erythema Mercurialis				3	1	
Febris Intermittens Quotidiana					3	
Febris Intermittens Quartana					1	
Febris Remittens					1	
Febris Remittens Biliosa			1	2	3	
Febris Remittens Infantilis			1		2	1
Fistula in perineo						2
Furunculus					prevalent	
Hæmorrhois					2	1
Hydrops Universalis	1					
Hydrothorax				1		
Hysteria				6		
Leucorrhœa				2	2	1
Mania					1	
Menorrhagia				1		
Peripneumonia	1	1				
Pterygium				1	1	1
Rheumatismus Universalis					1	

	Mar	Apr	May.	June.	July.	Aug
Rheumatismus Thoracicus					2	3
Rheumatismus Lumbaris - -						1
Synocha - - - - - - - -				1	2	
Syphilis - - - - - - - -					3	
Tonsilitis - - - - - - -	1				1	
Tremor a potu - - - - -		1				
Typhus - - - - - - - -						1
Urethritis - - - - - - -			1	1	2	3
Vermes - - - - - - - -			1		1	
Vomitus (a potu) - - - -					2	

Anthrax. The case of Anthrax which occurred in May, was one of the most formidable instances of the disease I have ever seen. The particulars of this case have already been published in this journal. (No. XI.)

Apoplexy. The case of Apoplexy occurred in a very robust young woman, where the menses had been suppressed, and on whom an attempt was made to restore them by administering an emetic previous to venesection, and without medical advice.

Asthma. The most alarming of the two cases of Asthma, was in a widow, aged 40, in whom the paroxysms were so exceedingly violent, as to give the appearance of a person in the agonies of death. She had been more or less afflicted every year with this malady since the age of eleven months. The following combination recommended by Dr. Tynes, under whose care she had been for a long time, always operated like a charm, and though it could not annihilate the complaint, never failed to afford her, she informed me, almost instantaneous relief.

℞ Elix. Paregor. oz. j.
Tinc. Thebaic.
Vin. Antimon. aa dr. j. M.

a teaspoonful frequently, or more, according to circumstances.

The catamenia in this case were regular, and also the other functions. During the paroxysm she usually vomited, and after it had subsided, complained much of acute pain in the muscular parietes of the thorax.

Cephalalgia. All the cases of Cephalalgia, arose from a redundancy of bile, and they were generally unaccompanied with fever; the pain was located over the eyebrows across the forehead, attended with soreness, but not redness of the eyeballs. The tongue was usually covered with a dirty yellow moist fur, and the mouth affected with a bitter taste. I consider this species of Cephalalgia to be one of the most idiopathic indications of a redundance of, and obstruction in the biliary secretion, of any that I am acquainted with. The affection was relieved by venesection (if obstinate), emetics; blister across the shoulders and back of the neck, cathartics, &c.

Convulsio. The case which occurred in March, was in a mulatto child, aged about three years, who being the pet of the house servants, had been indulged in rather richer fare than he would have received if he had been comprised in one of the number of field negroes. The consequence was, that he had been stuffed with fat and greasy food of all kinds whenever he desired to eat, and had become remarkably gross. Before I could make an impression on the disease, I was obliged to open both temporal arteries, and a vein in the hand, plunge him several times in a hot bath, blister the neck and extremities, and after the effects of the laudanum given at the beginning had gone off, to administer two large cathartics in succession, each containing calomel and rheubarb, aa. grs. vi. besides which, enemata, pink root tea, &c. After the fits had continued almost without intermission for 24 hours, the tone of the circulation, which had been augmented to a very high degree, became relaxed, the fever subsided, and the child recovered.

It was not the effect of worms, for only one was brought away, nor was it the invasion of any particular type of fever, as was proved by the rapid convalescence, and the symptoms associated with the convulsions; but it was the simple result

of the high state of tension, and sthenic diathesis induced by previous engorgement of the blood-vessels from the use of animal food, as roast beef, rich gravy and turtle soups, &c. all of which were extremely improper for the inflammatory temperament and feeble digestion of a child of that age. One of the other cases of convulsion, proceeded from worms (lumbria) and dentition, and is remarkable from the circumstance of the child who was the subject of it, being afflicted with the *dirt-eating disease*, though only twenty months old, shewing that this complaint, which Dr. Dancer compares to Chlorosis in women, cannot in this instance at least have been feigned. The mother told me, whenever it could steal away slyly, it was found lying in the path or road on its belly, licking up the dirt and dust.

Dysenteria. What are called the spring rains, set in the last week in May, and continued to the end of the first week in June. The mercury in the thermometer, which for nearly the whole of May, had every morning by eight o'clock reached as high or higher than 80°, fell on the 25th of the month several degrees, and continued to range between 73° and 77° until the 6th of June. During this period the rain fell almost every day in torrents on some part of the day, but only for a few hours at a time; the sun coming out between the showers. This sudden change of weather from a hot dry atmosphere, to one chilled by a succession of heavy rains with alternations of sunshine, produced a number of dysenteries during June, which may be said to have been the first month since my residence in Nassau, in which there has been any thing like a prevalence of sickness, and that by no means to the extent to merit the name of epidemic. In children under two and three years, it usually proved fatal, and the older the patient was, the more probability also was there of recovery. I believe indeed there was not an instance of a person dying who had arrived at the age of puberty, the constitution having by that time gained sufficient vigour to recover from the irritability and emaciation which this harassing distemper produces. Of the

symptomatology of a disease so universally understood, I shall say but few words. There were very few cases in which it was attended with febrile irritation, except in children, the local affection at their tender age seeming to re-act more powerfully upon the constitution than in those that were older. The tormina or twisting pain around the navel, the tenesmus, the lotura carnia, (called here *cold*) nausea, scybala, &c. were all precisely such as they have been so often described by those who have written upon this subject. In some cases pure blood was discharged to the amount of several ounces at a time, and if it is considered that the passages amount sometimes to forty in twenty-four hours, one may readily conceive the dangerous nature of the disease when the evacuations assume that character, and how seldom venesection can be requisite under such circumstances. In one case of a woman, who had nearly attained her sixtieth year, and where bloody discharges came on towards the conclusion of the complaint, I congratulated myself in not having bled her, or used any violent depleting means in the beginning. With great exertions she recovered.

Many cases seem to have been caused by the irritation of an over abundant quantity of bile in the primæ viæ; for they were relieved when the constriction was taken off, and copious bilious evacuations obtained by powerful and repeated cathartics. Most of the cases of dysentery this month no doubt were occasioned by the weather, but some of them were in part attributable also to certain fruits which began now to be brought in, before they were perfectly ripened, or in a state to eat. Such were the pine-apple, mammie, limes, papau, sour-sop, &c. most of which we are entirely unacquainted with in a cold climate.

I have heard some ascribe this disease to rain water washed down from the hill in the rear of the town into the wells, the water being in general very pure and uncontaminated with saline or other matters, even within a few yards of the sea, owing to its being filtrated through the solid porous rock out of which the wells are excavated. I think this opinion improbable: in

the first place, because I do not recollect to have observed the colour or taste of the water changed in any part of the town in which I drank it; and in the second place, because several cases of dysentery occurred in the Poor's House during my attendance there, and where the wells are situated on a knoll in the rear of the building, in such a manner that the water from the adjacent hill could not wash into them.

My treatment of the disease was extremely simple but very active, and I may add, without perhaps appropriating too much to myself, that it was eminently successful. If the excitement or constitution, and time of life, and other circumstances, admitted the employment of the lancet, that remedy when indicated, was always had recourse to, provided I was called early in the disease. I have frequently annihilated the disease in a few hours if called in time, by giving a powerful emetic, the whole at once, composed of

Tart. Ant. et Pot. grs. v.
Pulv. Ceph. Ipecac. grs. xv. M. fiat pulvis.

When there was much constriction in the intestinal tube, and much pain at stool, I never failed to begin with this invaluable combination. It has the happiest effect in relaxing the whole system, and particularly the spasm which exists in the muscular coats of the colon and rectum. After the nausea and vomiting had subsided, the medicine invariably passed off by stool, (indeed in some instances more frequently than it produced vomiting) leaving the patient free of pain and tenesmus, and in some instances, of every other symptom of the disease. If, however, the irritation in the bowels continued, the following combination was given a few hours after:

℞ Sub. Mur. Hyd. grs. xv.
Pulv. Conv. Jalapi dr. ſs. M. ft. pulvis.

I was often under the necessity of repeating this cathartic for several days, and also the ipecacuanha alone in small doses, together with the application of a large blister over the abdomen, and emollient injections, and the pediluvium several times in the twenty-four hours. I confined the patient

rigidly to bland drinks, as mutton soup with a large quantity of ockro boiled in it, arrow-root, sago, tapiocha, barley-water, gruel, and lemon grass, basil or common tea, never permitting him to deviate out of this catalogue, and to take no other food whatever, of any description, besides, to avoid especially, fruits. At the same time to be clothed in flannel, and to avoid damp air, and the night dews. After the disease had continued for a week or ten days, and the discharges became more healthy, but were attended with tenesmus, and occurred too often, and if at the same time the local and constitutional irritation had mostly subsided, leaving nothing behind but extreme emaciation and debility, I did not hesitate to commence immediately with opium, giving from three to four and six grains in the afternoon and night, in pills with or without ipecacuanha, continuing the patient upon the same diet and regimen, with the exception of adding daily a small quantity of brandy or wine to his arrow-root and gruel.

You will perhaps be surprised to see recommended such large doses of calomel and antimony. In this climate, what may be called the *centrifugal force of the circulation*, or the tendency of the fluids to the skin, preponderates so much over that to the interior parts of the organization, that those medicines intended as cathartics, will pass off in cutaneous perspiration, if not given in sufficiently large quantities. In relying upon small doses, the calomel gradually insinuates itself into the fluids, and the patient becomes salivated before we are aware of it, and as effectually as if it had been combined with opium, for it must be recollected also in reference to the principle I have assumed, that the salivary organs are located in the teguments upon the external part of the body. I have seen several persons in this town who have lost nearly all their teeth,* and been labouring for years under the influence of

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* In most of these cases, however, mercury had been given with an intention to salivate. In two children of this description, one of whom fell a victim to the mal-administration of this medicine, portions of the alveolar

mercurialization, in some cases perhaps thus unintentionally induced by the injudicious administration of this medicine.

Towards the termination of the disease, I found the sedative properties of opium occasionally combined or alternated with ipecacuanha, and a resolute adherence to bland liquid nourishments, sufficient to check the evacuations, and restore the tone of the bowels, without the aid of lead or vegetable astringents, which from what I have seen, I should suppose to be medicines of very doubtful efficacy, if not dangerous to be administered at any stage of the disorder. In some few cases, I have seen an obstinate tenesmal diarrhœa prolonged for months after the primary affection had been entirely removed.

In such cases, the failure of almost every remedy prescribed, and the danger of the patient sinking under the exhaustion produced, tempts one to have recourse to whatever may have the reputation of astringent properties. The sea-grape tree, the pomegranate, bay-cedar bush, bark of the guava, and many other indigenous plants of these islands, are much used among domestic remedies. I am induced to believe they generally do more harm than good, and ought not to be administered but with the greatest caution.

A drink composed of a small quantity of cinnamon, with gum arabic boiled in milk, employed as an auxiliary to opium, I have found highly useful at this stage of the disorder.

I have dwelt more particularly on the subject of dysentery, because although it did not at any time assume the character or type of camp and epidemic dysentery, it was the principal disorder with which I have had to contend, and was the only one that can be said to have been at all prevalent, as you will perceive by the report for July and August.

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process near an inch in length, and half an inch in breadth, with the teeth firmly set in them, were entirely denuded of the gum, and separated from the jaw-bone, so as to be removed without difficulty by the aid of the fingers! I have one of these pieces in my collection. There was no suspicion of venereal taint in either case, and nothing that could have justified this barbarous practice.

Erythema Mercurialis. I have had occasion already to allude to the abuse of mercury. You would be shocked to hear how unconcernedly many physicians of the West Indies speak of salivating their patients, and grieved to see the loathsome and painful affections which they have substituted in the place of fevers, liver-complaints, and dysenteries, for the removal of which they had unnecessarily employed it. When the physician from defect of preliminary education, too limited an experience, or too dull an understanding, finds himself at fault, he flies to mercury as a forlorn hope, which, though it may be the means of extricating himself from an unpleasant dilemma, entails upon his patient complaints that may not only be prolonged through life, but extended down as an hereditary legacy to unborn generations.

Two of the cases to which I refer under the head of erythema mercurialis, had been mercurialized for gonorrhœa! Neither of them had ever had chancre, or any symptom of syphilis. In one case a chronic irritation in the mouth and throat, with rheumatic pains, hypochondriasis, &c., were the consequence of this mal-practice. In the other, the distressing affection of anaphrodisia was induced. In the first case, I immediately suspended the blue pill and alterative drink which he had been using, I believe, for a year, and put him on tonics, exercise, &c., which soon restored him to health. The other was cured mainly by the local cold bath.

Febris Remittens Biliosa. There have been but very few cases of fevers, much fewer than could have been anticipated from the extreme heat of the first two months of summer, especially in July, in which month, however, they were as might have been expected, more frequent.

As the summer opened, the few cases of remittent fever I attended became complicated with bilious symptoms, but in none of them did any peculiar phenomena present themselves different from what I had been led to expect from the writings of West-India authors, and from similar fevers that I had seen in the United States.

Nor could I discover any peculiarities even in two of the cases that were persons from the north, unacclimated, one of whom had only been a resident here a few months, and was a Scotch clergyman, in the prime of life, of sanguine temperament, robust, plethoric habit, and in the most perfect enjoyment of health. This case happened in May, and the gentleman in whom it occurred, was the very counterpart of those subjects from a northern clime, which are declared to be most obnoxious to yellow fever, on coming into the tropics. If, as some writers affirm, yellow fever be an endemial indigenous remittent fever of the tropics, incapable of being propagated by contagion or importation, but produced by atmospheric or climactic circumstances, acting within the equatorial regions upon the constitution of those who have recently arrived from cold countries, then I aver that the case of which I speak was a most fit subject for it, and ought to have developed the pathognomonic symptoms of the disease. But if this was a case of yellow fever, and the genuine vomito prieto of the West Indies, then am I willing to declare myself totally unacquainted with it, and bold to say, that it is specifically and widely distinct from the vomito prieto which I have seen at New-York, and from the vomito prieto of the West Indies, described in such glowing and inimitable colours by Towne, Lining, Warren, and the other high authorities upon this disease.

In the particular example to which I allude, and which may be considered as a good specimen of the type of bilious remittent, there were no external agents to which it could be ascribed, excepting the influence of a tropical heat in producing an inordinate secretion of bile, which without doubt was the exciting cause. He had been exposed to no miasmatic exhalations, nor was there any of those diseases which arise from such causes prevailing at the time. Indeed the town had enjoyed uninterrupted health for months. The patient did not labour under any extraordinary degree of arterial excitement at any period of the disease. He had been complaining for two or three days before I saw him of nausea,

vomiting, and some griping pain in the abdomen, and pain across the kidneys, to which last he had been often accustomed, but still went about. I found the pulse 120, and from its strength felt authorized in using the lancet to the extent of ℥xx, which was repeated on the following day. From the invasion of the fever, there was an invincible torpor in the alimentary canal, which, however, was finally subdued on the 4th and 5th days, by the active employment of calomel in pills of grs. x.—xv. each every few hours, alternated with saline and other cathartics. From the second and third days there were evident remissions, usually in the morning towards noon, and again towards midnight, the exacerbations coming on in the intervening periods. There was yellowness but no redness of the adnata, or pain in the eyeballs, but great irritability about the epigastrium throughout his sickness; so much so, that vomiting was excited on sitting up, or on the administration of enemata. This caused me to apply a large blister over that part, and to abandon the idea of using any thing of an emetic property, for fear the coffee-ground vomiting, which Chisholm mentions as one of the occasional symptoms of the worst form of bilious remittents in the West Indies, might be brought on. The bowels having been plentifully evacuated by copious fœtid bilious stools, the skin freely opened, a solution of the disease was obtained about the tenth and eleventh days. I discovered immediately that a favourable crisis had arrived, when I perceived that the skin had been so much unlocked as to excrete perspirable matter in great abundance, with a strong, bitter and bilious odour, that the stools which had been for three days serous and watery, now became thick, yellow, and fœtid, and the urine copious and strongly tinged with bile.

If I had been prescribing for a native, or one who I was satisfied had been acclimated to the country, I should not have hesitated a moment to have administered an emetic, and if necessary, to have repeated it. But in the present instance, intimidated perhaps by the bold asseverations of those who entertain a different opinion from myself, I thought it most prudent

to err on the safest side, and therefore declined pushing the treatment to the full extent I thought the symptoms would have warranted.

I leave it to you to determine, whether, in your judgment, the above assemblage of symptoms coincide with what you have been accustomed to see in the yellow fever, or vomito prieto of New-York.

Furunculus. The hot dry weather of July was thought to have been the cause of boils which prevailed during this month, particularly in children about the face and shoulders.* In a case which occurred in August, these indolent inflammations appeared over every part of the body and extremities of a negro man, aged about 30, and were so painful as to disable him from work. A mercurial cathartic and low diet, gave immediate relief. The emollient treatment is to be preferred.

Hæmorrhois. In two bad cases of this disease, the tumours were seated externally, and had existed for years. With the aid of the forceps and scissors, the whole of them were removed, leaving the anus in a perfectly natural and healthy state. Before, however, the cicatrization was completed, it was found necessary in the worst case, to administer enemata of warm oil, warm water, and laudanum, and also emollient antiseptic anodyne poultices.

Hysteria. In the month of June there was an unusual number of cases of Hysteria; and the complaints of females in that and the following month, were usually complicated with hysterical symptoms. This circumstance was perhaps connected with the change of season from spring to summer. One or two cases required venesection and other depleting means; but in general, relief was procured by embrocations of ammonia and laudanum over the epigastrium, the warm bath, enemata, and antispasmodic anodyne drinks ad libitum.

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* The extreme hot weather of this month brought out the prickly heat upon almost every one, and in some instances an eruption of coarser and larger pimples, when it was denominated *horse heat.*

until the spasms, globus hystericus, risus sardonicus, and other alarming symptoms had disappeared. I have seen the disease at almost every period of life, from fifteen to seventy. In one of the cases, who was an unmarried woman from the United States, that had not been long in this country, the same peculiar guttural laugh, that characterized her during health, formed one of the most prominent symptoms of the disease.

Leucorrhœa. I have found this distressing complaintequally obstinate and prevalent among the females of this, as among those of a cold climate. The tonic treatment, with few excepitons, is that which is most successful. The worst form of this complaint, is that which is accompanied with dysmenorrhœa at the recurrence of the catamenia. In those cases I have seen the patient suffer the most excrutiating agony from pain shooting from the uterus and pubes up the belly into the breasts, though the circulation was at the same moment slower perhaps than natural, and the extremities cold. Laudanum administered ad libitum, both by the mouth, enemata, embrocations, and thrown up into the womb, together with warm stimulating drinks, and the warm bath, and cathartics, were sure to produce a mitigation, and ultimately a subsidence of these alarming symptoms.

I have found no astringent lotion preferable to another, though I have combined those that have that property, both from the mineral and vegetable kingdoms, in almost every proportion. I have not been able to persuade myself yet, of the propriety of administering lead internally, as recommended by our able fellow-countryman of Philadelphia, Dr. Dewees.*

Mania. I have seen but two cases of Mania upon the island. One chronic, in the person of a French mulatto female, who is said to have been an actress in Martinique.

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* The volatile tincture of guaiac was used in one case in which the formation of a false membrane was suspected, and with evident benefit.

The other was a young black man, a butcher, who was seized with the disease in market, in the month of July, and died the following day.

Peripneumonia. This disease was generally mild in its symptoms, compared with pulmonic affections in the United States, except in Negroes, whose circulation being much slower, and quantity of absolute heat consequently much less than in the whites, were of course more sensitive to the vicissitudes of weather, and therefore more liable to the complaint, and required more active treatment. Dr. Tynes, who has been a resident practitioner here for thirty years, and who is a close observer and sound reasoner upon what falls under his notice, informs me that phthisis pulmonalis, especially among the blacks, is by no means a rare disease in this island. He has seen to the number of twelve cases in a year, most of which proved fatal.* The natives, and especially that class of them (the negroes) whose constitutions are by nature best adapted to a hot climate, are of course the most obnoxious to pulmonic disorders. There are many of the whites who, though born here, are less subject to this class of diseases than they would otherwise have been, from the practice which many parents have of educating their children in England, or, as it is familiarly termed, at home, during which time they lose of course a part of their susceptibility to diseases of cold countries.

Pterygium. [Membranous and fleshy.] I have found this one of the most prevailing affections in the island, and have no doubt but that it is attributable to the constant glare of a hot sun, reflected from the roads, which are rendered almost perfectly white when the rock through which they are cut becomes pulverized. The houses also being generally painted of a light colour, or when built of the rock, stuccoed over with a white plaster of the same material, as in Paris and most French cities, assist in producing the same effect.

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* The respective population of black and white was at the time about the same as at present.

I have operated upon several persons for this complaint, and never failed to remove the dimness of vision by the absorption which the operation caused, of the thickened membrane of the conjunctiva in the membranous species, and of the red fleshy lymph deposited beneath this tunic in the fleshy species. In the membranous species, that part of the pteryx which is extended over the cornea, is semi-transparent.

According to Mr. Travers, this affection of the eye is much more common in warm than in cold climates.

Rheumatismus. This is quite a common complaint, and is generally caused not by the direct action of cold, but by suppressed perspiration, to which persons are very liable in this climate, upon the least change of temperature, so profuse is this discharge on taking the least exercise in warm weather.

Inasmuch as a residence in a hot climate calls into constant play the functions of cutaneous transpiration, and exacts therefore a more perfect and elaborate development of the apparatus employed in this office, all those agents that have a tendency to increase the action of the cutaneous vessels artificially, must be injurious to health: I therefore very much question the utility of wearing flannel next the skin, to the extent to which it has of late become so fashionable in the West-Indies.

A large proportion of the saline, acescent and other excrementitious parts of the fluids which in a cold country are discharged by the bowels and urine, in this climate are eliminated through the exhalent vessels upon the surface of the body; a fact very obvious to the plainest understanding, by the abundant perspiration which takes place, and by its strong *ammoniaco-oleaginous* odour in whites as well as blacks, and also by the scanty, limpid character of the urine,* and

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* Though the greater portion of the West-India Islands are of calcareous formation, and the water which they afford necessarily imbued with this earth, the determination of the fluids to the kidneys and other internal organs is so feeble, that calculous complaints are seldom or never heard of:

the scantiness of the stools. It is this which makes the skin the most important perhaps of all the organs of the body, as a medium through which curative agents may be employed in the diseases of tropical countries. The power therefore which nature has placed at our disposal over this part of the system, ought to be held in reserve, to be used when it can be of most essential service, and not misapplied and wasted by over-exhausting the cutaneous functions during health.

In those who have recently arrived in hot climates, and whose organization has not become moulded or remodelled, as it were, to the new circumstances under which they are placed, the use of flannels, to a certain extent, and for a certain time, may be salutary, by accelerating a process which nature, unassisted by this means, would be more tardy in accomplishing.

But in those who are natives, or whose ancestors have lived for ages in the climate, and whose constitutions therefore have become as thoroughly assimilated to it as the indigenous plants of the country, the use of flannels must not only be superfluous, but highly deleterious.

That species of rheumatism which was seated in the pectoral and intercostal muscles, appears to have been the most prevalent, and was often mistaken for a pulmonic affection.

Synocha. I have seen several cases of pure synochal or inflammatory fever, unaccompanied by any local or organic affection whatever. In one, there was in the beginning profuse epistaxis, which, however, did not supersede the necessity of repeated venesection.

The subject of this case being a negro, there was not that inordinate excitement in the blood-vessels which is usually present in this type of fever. By pursuing steadily and actively the antiphlogistic treatment, the fever gradually abated, and the patient recovered. The tongue during the

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which, it must be confessed, is an exemption that ought to be esteemed an equivalent, almost for all the inconveniences which one is obliged to endure in a hot climate.

disease was covered with a bright white thin fur, but there was not the slightest irritability of the epigastrium, or of any other part, except a pain in the limbs, and particularly in one of the knee-joints, towards the termination of the complaint.

So far then as my limited experience goes in tropical fevers, I should not hesitate to declare that the bilious remitting fever, and the ardent or inflammatory fever of this climate are as specifically different from, and unlike yellow fever, [the vomito prieto,] as they are in the temperate zone.

Syphilis. The cases of this disease which have fallen under my notice, were chiefly those in which secondary symptoms existed. The venereal virus seems in this climate more disposed to expend its force in what are usually denominated secondary, than in primary symptoms, owing perhaps to the same law in the physiology of the fluids, which has already been adverted to. Chancres and buboes are much more uncommon than deep fœtid ulcerations in the throat, copper-coloured eruptions upon the skin, thickening of the ligaments, ulcerations above the ankles, nodes, warts, tumefactions of the glands of the throat, with sympathetic affection of the auditory nerves causing loss of hearing, rheumatic pains, caries of the bones of the nose and of the small joints of the extremities, &c. I have seen several patients afflicted with the most formidable symptoms enumerated in the above catalogue, in whom not a vestige of primary disease could be discovered in the organs of generation.

Against this peculiarity, however, nature has made ample provision by storing the vegetable world with abundance of plants which possess specific and powerful virtues in neutralizing and eradicating the taint with which the blood becomes impregnated in this loathsome malady.

Among them are the guaiacum, long so celebrated, the rat-root, milk-weed, and numerous others. All these plants are indigenous to this climate, and possess invaluable alterative properties. In one case, a mild decoction of the milk-weed was the only remedy which seemed to make any im-

pression upon an inveterate case which had resisted all the usual prescriptions. In two other cases the decoction of these plants proved of most decided benefit in conjunction with the mineral acids and tonics. I have of late made use of a compound decoction consisting of the

Rat-root,
Milk-weed,
Guaiacum,
Sarsaparilla, and
Mezereon.—aa. ʒij. coque in aqua fontana ℥lx. ad. ʒxl.

Typhus. As has been remarked by Sir Gilbert Blane and others, typhus in this climate is a rare disease, except under those peculiar circumstances which favour the concentration of human effluvia, as on shipboard, in prisons, &c. In domestic life this peculiar condition of things seldom or never happens, because the windows and doors of the houses being almost constantly open throughout the year, the air within has as free a circulation, and is in every respect as pure as that without. Nevertheless, some particular state of the fluids in an individual may give occasion to the generation of the disease within the system, without the co-operation of external influences.

Such was the solitary case which is inserted in the table of diseases, and which occurred in the person of a black girl, in a house situated in a most airy and agreeable part of the island, occupied only by the mistress and patient, and free from every suspicion of an infected atmosphere within doors or without. The symptoms were not aggravated, but the type of the disease was fairly and unequivocally developed. —The pulse was frequent and soft, the skin dry and hot, and the tongue and lips glazed over with parched scales.* There was great restlessness and anxiety, and want of sleep,

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* The excretions also between the labia and nymphæ, produced an excoriation of those parts, and emitted a putrescent odour.

and occasional delirium, and what would have been considered rather anomalous in a cold climate, considerable irritability in the stomach, with occasional rejection of the food and medicines administered. There was a torpor also in the alvine and urinary functions, both of which are characteristic of this fever. There was high arterial excitement in the first three or four days of the disease, with bilious symptoms, and some pain about the umbilicus and epigastrium, but no symptom which could lead to a suspicion that the fever was complicated with any organic affection. The first remedy administered was an emetic, afterwards gentle cathartics, and ablutions of cool vinegar and water, enemata, and then stimulant antiseptic drinks, and effervescing mixtures, by which means a crisis was obtained about the ninth day. It is to be observed here, that the constitution of the native negroes, is apparently more completely assimilated to the climate than that of any other description of persons, on which account they are much more able to sustain, and are much more sensibly benefitted by the action of emetics than the whites.

I did not perceive in this case the least analogy to the vomito prieto, though this last disease has been by some authors considered a modification of typhus.

Urethritis. The discharge from the urethra in the beginning is very apt to be mingled with blood, which perhaps is salutary so far as it helps to reduce the local inflammation. Tumefaction and induration of the testicles, strictures and fistulous openings are not unfrequently met with among the blacks, as the consequences of this complaint, partly owing to their own neglect, and in part attributable to the mal-treatment and empiricism of overseers, to whom unfortunately the owners of plantation in the out-islands where no medical aid can be procured, are obliged to entrust the lives of their slaves.

Vaccination. As this disease has of late excited much interest in the United States, it may not be irrelevant to state that during the month of July, I vaccinated gratuitously,

about sixty blacks and mulattoes, from matter between glasses received in the spring from the London Vaccine Institution. Though July is the hottest month of the year, and was this year peculiarly distinguished by its extraordinarily high temperature, the virus by being inserted in its liquid and fresh state, was communicated with as much facility as if the weather had been cool. There was scarcely a single failure, and the vesicle was in every case genuine. I attribute this susceptibility to receive the infection, to the more highly organized condition of the cutaneous tissue in a hot climate, on the same principle which I have already alluded to. In confirmation of which it may be added, that there was in a great proportion of the cases, a good deal of constitutional irritation, which however, did not prevent the successful issue of the local affection. The virus was taken from the arm on the 8th day, at which period it was in almost every instance limpid, and semi-transparent, less turbid apparently than after the same lapse of time in a cold climate.

ART. IV. OBSERVATIONS *on the causes of* ENDEMIC FEVER, *in a letter addressed to* ALEXANDER COVENTRY, M. D. *late President of the Medical Society of the State of New-York.* By WESTEL WILLOUGHBY, M. D. Professor of Obstetrics in the University of the State of New-York.

Fairfield, (Herkimer County,) December 18, 1824.

MY DEAR SIR,

WHEN I had the pleasure of seeing you at your house in September last, we had some conversation on the subject of fever.

I remarked with pleasure that our views relative to the cause, nature, and diversified appearance of endemic, (or what is generally denominated by most of our physicians, the typhus) fever of our country, were strikingly the same; and mentioned to you, that I had seen in the same year, and arising from apparently the same cause, fever, varying in its

type, from the simple inflammatory, to the most malignant typhus.

Not long since, your son informed me that it was your wish that I should give you a statement of a case mentioned in the above conversation, where the symptoms were correspondent with those of yellow fever. I now comply with that request. Since my residence in and near this place, (thirty-two years) I have had various opportunities of observing and investigating the cause of endemic fever. It prevailed in certain neighbourhoods in the years 1792 and 93, and again in the summer and autumn of 1796, and in the winter and spring of 1797.

But the most distressing and widely diffused state of fever prevailed in this country, in the spring, summer, and autumn of 1803. Emphatically may it be said of that year, that the "mourners went about the streets."

I do not recollect a single year since I have been a physician, that I have not witnessed sporadic cases of fever originating from some local filthiness. But we have not had any thing like a spreading state of fever since 1803; and probably we shall not again witness such a scene. The cause cannot again exist; to wit, the decomposition of vast bodies of vegetable matter; for independent of the foliage of the forest, and the luxuriant growth of vegetables from the woodlands that were in a decaying state in the spring of 1803, may be added, the decomposition (in every field) of stumps, old logg-heaps, *girdled* and felled trees. These pestiferous bodies being acted upon in the spring of 1803, by more than an ordinary share of vernal heat and moisture, readily account for the prevailing fever. The forest having been subdued by the axe of the industrious farmer, the stumps and decaying trees having disappeared, and the fields annually clothed with verdant crops, while our district of country being elevated and airy, with no sluggish streams, no stagnant ponds, or marshy grounds to annoy our borders; we have an exemption from the most prolific source of febrile excitants.

But from those very local causes of fever, such as the decomposition of vegetables in cellars, large quantities of barn manure in yards, stagnant ponds of water from broken aqueducts, &c. I do not expect an exemption, for it is impossible to make the great mass of the community sensible of the danger arising from those deleterious sources.

On the 20th of May, 1816, I was requested to visit J. Holliday's family of Russia, several of them being sick with fever. Dr. Wm. Frame was the attending physician. On my arrival I found the eldest son dead. The father was in a state of fever the most unpromising, from repeated hemorrhages from the bowels; his wife and three other children labouring under febrile excitement, but not dangerous. The servant-maid and a hired man, were the only inmates of the family that were able to keep about, and even the maid-servant had a very sickly countenance.

Anxious to learn the cause of so much distress in this family, as it was universally healthy in the vicinity, I asked the attending physician, what could produce the fever? He observed he did not know, and was unable to account for the source of the mischief. Mr. H's dwelling was elevated, airy, and his house supplied with an abundance of good water.

Suspecting the cause, I inquired if the cellar was clean; one of the domestics informed me that there had been a quantity of frozen potatoes and some cabbage left in the cellar, which gave out the most offensive smell, and that she could not go into the cellar without vomiting.

This at once accounted for all the distress The offensive materials were immediately removed by the neighbours, but not with impunity; most of them became sick, and vomited while executing this neighbourly kindness. Under proper treatment the family all recovered, except the eldest son above mentioned; he fell a victim to the complaint on the seventh day from the attack, labouring under most of the symptoms of typhus gravior.

Mr. H. the father of the deceased, nearly shared a like fate: his fever was strictly malignant, while the residue of the family (four in number) might be said to have a mild inflammatory rather than typhus fever.

In 1823, Dan Post, Esq., one of our ablest and best farmers, neglected to remove some obstruction that prevented the water escaping from the door of his kitchen, where it was deposited from his aqueduct.

The water flowed back under his wood-house, forming a pond of stagnant water, in which were deposited a large quantity of chips, and other perishable materials. It was observed, that as the summer advanced, a most disagreeable smell arose from this place, yet not knowing the danger to which they were exposed, the family neglected to remove the cause. This became, however, a source of so much annoyance, that on the first of August, the drain was opened, and the stagnant water carried off; but this was too late; fever had already made its appearance in the family, and by the 10th, there was not a solitary individual of the family, (ten in number) who was not confined with fever. The complaint was more than ordinarily inflammatory; they were very sick, but all recovered under the rigidly antiphlogistic treatment.

On the 20th of August, 1823, I directed my two hired men to remove a heap of manure from the barn yard to the field: the weather was warm, and the manure upon its outer surface dry. Towards evening I went to the yard, and was surprised to find that as the workmen penetrated the heap, it became very moist, and gave out a most disagreeable stench: I immediately ordered the men to leave the manure, which they did. The eldest of the hired men observed previously to going to bed, "that he had not worked harder than usual, yet he was never sensible of being *so tired after a day's labour*;" before morning he was taken with chills; these were soon followed by feverishness, cephalalgia, oppression at the præcordia, and during the exacerbations, some delirium. The fever assumed the remitting type, and was quite inflammatory. It continued until the 7th day, and then gradually

disappeared. An involuntary twitching of the muscles of the neck, so as to throw his head from his pillow, was an attendant in his case: this phenomenon was without pain, and returned at uncertain intervals, and generally continued from 10 to 15 minutes at each attack. The other hired man sickened on the second day after working at the manure, and was much sicker than the former; the remission between the exacerbations was longer, yet he ran down into a low state of fever, from which he recovered with difficulty. These local causes of fever are so exactly in accordance with the cases mentioned in your most valuable communication to the State Medical Society last winter, that I was unwilling to pass them while making a few observations on fever. I will now briefly state one or two cases of the more malignant form of fever, as mentioned in the conversation alluded to above.

From my note book. June 4th, 1806. Benjamin Randell, aged 22, sanguine temperament, is this day dangerously sick with malignant fever. He complained on the 2nd of great weariness, severe pain in the head, back; chills alternating, with heat, sickness at the stomach, &c. I visited him on the 3d. Great pain in the head, giddiness upon rising up, appetite gone, tongue white, but thickly loaded, skin dry, temperature somewhat increased, excretions diminished, bowels confined, pulse accelerated and somewhat tense, little thirst, eyes heavy and painful, suffused with tears, and impatient of light. He was bled 16 or 18 oz.—gave a cathartic of jalap and calomel, ordered warm applications to the feet, cold to the head, excluded light and noise, drinks sub-acid. 4th, Symptoms not improved by yesterday's depletion, a little easier after detracting the blood, but the evening exacerbation was more protracted, with some aberration of mind. Pulse 100, rather soft and floating, tongue inclining to brown, but thickly coated and moist, breath offensive, some nausea, headache, eyeballs tender and suffused with tears; took 12 oz. blood, which was not cupped, and had little buff, crassamentum tender and dark coloured: gave an emetic and the saline mixture after the operation, epispastic to the neck, warmth to

feet, cool water to the head, drinks as above, &c. 5th. Symptoms more alarming, tongue more brown not so moist, teeth and gums covered with a brown crust, great prostration of strength, coma, and low delirium; articulation greatly impaired, as well as respiration, pulse 112 and small, the countenance sallow and greatly depressed, evacuations from the bowels dark and very offensive. Gave 12 grains of calomel to be worked off with castor oil; then a liberal use of the effervescing mixture, yest, decoction of the bark acidulated with sulphur. acid; sponge the surface with cold water and vinegar. 6th, No relief, symptoms very unpromising, stomach very irritable, vomiting frequent, the contents thrown up dark and offensive, stools frequent and of the same complexion, is comatose and swallows with difficulty, adnata of the eye yellow, and pupil dilated, small vesicles appear behind the ears and on the sides of the neck, filled with a yellow serum, petechiæ appear on the legs, while a dusky yellowness pervades the whole surface. Treatment: Purge of rhubarb and calomel—after the operation, a Dover's powder combined with camphor; antiseptics as yesterday, with the addition of wine.

7th. 9 o'clock A. M. patient sinking into the arms of death, stools involuntary, black and uncommonly offensive; the ejections from the stomach black, resembling the dregs of the coffee-pot, or what is thrown from the stomach in yellow fever. The pulse is small, rapid, and intermitting, the vesicles about the head and neck have greatly extended, some of them on the neck and upper part of the chest, contain from one to two teaspoonfuls of a deep yellow serum, resembling the blisters that precede or accompany gangrenes; the petechiæ on the legs are more numerous and of a livid complexion; the yellowness of the skin has increased, patient senseless, unable to swallow, breathes with difficulty. Died 4 o'clock, P. M. in a highly putrid state.

It is worthy of remark, that four others of Mr. Randall's family were labouring under fever at the same time: their cases assumed no unusual type, and yielded to ordinary reme-

dies. Several other families in the same neighbourhood were down with fever, and a son of the Rev. Benajah Corp, aged 21, died on the 14th day, with all the symptoms of compressed brain. The fever was brought into the neighbourhood by a young man from Onandago county, who came from a place where it prevailed, and sickened immediately on his arrival; no other cause could be assigned or detected; no one had the fever except those that had been among the sick. Several instances of this kind I have noted down where the fever has been brought into my district, by strangers coming from sickly places, first imparting it to those who had the care of them, and then by contact it has spread from family to family, and from neighourhood to neighbourhood.

The fever prevailed very extensively in the summer of 1803, and as I believe from the cause above stated: congestions of the brain, lungs, and abdominal viscera, were common attendants this season; and several died apparently from phrenitis, terminating in an effusion of the brain; many from hemorrhages of the bowels; these discharges of blood from the bowels took place in every instance after the subsidence of pyrexia, and while the patient was apparently in a state of convalescence. Those that survived the hemorrhage (which most of them did) had a rapid recovery.

Mr. Wm. Hurd (a brother-in-law of mine) sickened with the prevailing epidemic on the 2nd of May 1803; on the 7th his fever left him, on the 8th, he was quite comfortable, on the 9th he had an appetite and walked out, and imprudently set himself down on the bank of the creek—the air was cold and damp. In the evening he complained of severe headache, great weariness, was seized with a protracted chill, pulse small and at 120; violent reaction ensued, delirium came on, tongue became dry and soon brown; he passed on rapidly to death, in spite of every effort to save him, expiring on the 9th day after the relapse.

His case was strikingly analagous to Randall's, except that the yellow vescicles and petechiæ were wanting.

There was one symptom, and which might be considered

as rather premonitory than otherwise, universally present this year, (1803) which I have repeatedly noticed before and subsequently, and one which I do not recollect of seeing noticed by any writer. It was a certain diagnosis of fever, and by it I have been enabled to predict the certainty of fever before the patient was in the least aware of his danger, or hardly considered himself indisposed. This was a stiffness and aching sensation of the muscles in the back part of the neck. This sensation has generally made its appearance several days previously to the usual symptoms of fever.

Have you noticed this symptom in your practice?

Thus, my dear sir, I have witnessed the various modifications of fever, from the mildest remittent, or the most simple inflammatory, to that of a very malignant type, arising from the same cause in the same family, and at the same time. The modifying cause may sometimes be detected, but it more usually eludes investigation.

I am certain that the decomposition of dead organized matter, whether it be animal or vegetable, or both combined, when acted upon by heat and moisture, produces a poison, (miasm if you please) which is the common exciting cause of fever; and that this poison, whatever it may be, diffuses itself over the whole system, deranging its various functions. With Fordyce, I believe that fever is a "disease of the whole system, in every kind of sense," and that the pathology of Ploucquet, Blutterburk, Broussais, &c. are founded in error, having mistaken the effect for the cause. In the treatment of fever, the practical physician cannot be shackled with any system of pathology, but he will treat it as he finds it, viewing it as an effort of nature to resist some hurtful impression, or remove from the body the morbid excitement; he will watch most vigilantly the several functions, relieving oppressed ones, and thereby preserving the integrity of structure. At times he must lessen the too great excitement of one organ, while he removes the torpor of another. He invites the blood to a cold and constricted surface, thereby relieving the oppression and congestion of the vital viscera, &c.

Art. V. A *Dissertation on* Ergot, *read before the Essex District Medical Society, New-Jersey, March* 1825. By Dr. John Ward, of Newark, N. J.

It is now nearly six years since I commenced the use of this article, during which time I have given it sixty or seventy times, and excepting in one case, it has fully answered my expectations, by producing powerful uterine contractions in fifteen or twenty minutes after its administration. Its primary action I conclude is on the stomach, for I have often observed a convulsive motion resembling hiccup, with an expulsion of wind upward, follow its exhibition in five or ten minutes, after which in some cases a rigor resembling an ague was perceptible. A powerful and almost unceasing contraction of the womb then takes place, and continues until the child is expelled.

The contraction of the womb has in some cases been so powerful, that I believe a laceration of the perineum would have taken place, unless I had prevented it by counter pressure. In all the cases in which I have given it, unless the child was expelled very soon after the powerful contractions came on, it suffered very much, and would lie for some time without breathing.

A lady of my acquaintance, who formerly lived in this town, and whom I attended in her three former labours, which were natural, lately informed me that in her last labour her membranes were ruptured without pain. She sent for her physician, who lived four or five miles distant. He came early in the morning, and remained with her until 3 o'clock P. M. During this time she had very little pain, and he being anxious to return, gave her some tea, which he prepared, (no doubt from ergot,) and in a few minutes her pains became violent, and continued so, for three-quarters of an hour. Her distress, she said, was almost insupportable. The child was born dead, and she was not able to turn herself in bed for four or five days. From my

own observations, with regard to the effects of ergot, as well as from other correct sources of information, I am led to conclude, that in most cases after giving it, unless the child is expelled in forty minutes after the powerful contractions come on, it will be born dead. There may be cases where the woman is so much exhausted from the long continuance of the labour, or from hemorrhage, that the uterine fibres have almost ceased to act: the ergot in these cases may not produce stronger pains than are really necessary for the safety of the mother or child; but in general, if the woman's strength is not impaired, and the ergot is given, and the powerful contractions come on, which I believe they will forty-nine times out of fifty, if the child is not expelled in forty minutes, it will be lost. Death is most probably occasioned by the constant and strong pressure of the womb against the child, funis, and placenta, thereby interrupting the circulation. If such results follow the use of ergot, the conclusion must irresistibly be drawn, that it is a powerful and dangerous medicine, and that its specific action is on the muscular fibres of the grand uterus. The lives of many children have no doubt been lost by the untimely or injudicious administration of this article, and consequently many and strong prejudices have arisen against the use of it. I have lately conversed with two eminent physicians in a neighbouring city on the propriety of its use. One declaring his abhorrence of the article, said it ought never to be used. The other said without reserve that he considered it a valuable medicine in parturition, and that it was the best forceps he could use. But, notwithstanding such contradictory opinions, and notwithstanding the powerful effects which it produces on the gravid uterus, I am still of opinion that it may be given with safety and advantage in many cases.

The directions for its use must be founded on its unequivocal operative effect in increasing uterine contraction. This being acknowledged, I shall first state some circumstances which will forbid its employment, and then give the indications for its use.

First. Ergot ought never be given until the os uteri is completely dilated, excepting in one or two cases, which I shall mention hereafter. The process of labour is ordinarily a natural one; and so long as there is no interruption or hazardous deviation in this process, although it proceed ever so slowly, artificial interference is highly improper and unjustifiable.

Secondly. It ought never be given in cases of impaction, or where there is a disproportion between the head and pelvis. If the head of the child appears to be wedged in the pelvis, so that the natural pains have but little effect on it, and you perceive a soft tumour formed, or forming on the presenting part of the head, although the os uteri may be dilated, the probability is that the child will die before it is expelled, if ergot is given. In such cases, if the natural pains will not effect delivery, it will be better to extract with the forceps. It is almost impossible to lay down any fixed rule in these cases with regard to the use of ergot. Very much must depend on the judgment of the accoucheur. There, no doubt will be cases, where in consequence of the rigidity of the os uteri, the labour has been long protracted, and the woman's strength is so much exhausted, that the pains have but little or no effect in advancing the child, and yet the head may not be so firmly wedged in the pelvis as to prevent expulsion, if the pains were strong. In these cases I suppose the ergot may be given, but it will be more safe to wait until the child is far advanced, so that the perineal tumour is fully formed. But in all cases where the labour is protracted by any unnatural impediment, whether it be owing to mal-conformation of the mother or child, to attempt to overcome the difficulty by increasing the muscular action of the womb, would in all probability be unavailing, and always highly dangerous and improper; dangerous not only to the child, but also to the mother, for a rupture of the uterus might take place, a circumstance always to be dreaded.

Thirdly. I need scarcely mention that it would be highly improper to give the ergot in all preternatural presentations,

excepting breech and footling cases. Should the presentation of the child be such as to render it necessary to alter its position, it is certain that the uterine relaxation is highly necessary to facilitate the operation.

Notwithstanding the above precautions, there are some cases in which the ergot may be advantageously used, and, I should think, be a powerful means in saving the life of the parent.

First. In alarming uterine hemorrhages, which sometimes take place before delivery; whether it takes place in consequence of a detachment of some portion of the placenta, it being attached to the fundus uteri, or whether it be owing to a separation of its attachment over the orifice of the uterus. In the former of these occurrences, I have no doubt the ergot would be beneficial. The hemorrhage in this case frequently takes place without pain, and sometimes continues alarming until pains come on, which generally put a period to the discharge. In these alarming cases the life of the mother is principally to be regarded. If the hemorrhage continues profuse without pain, her strength will soon be exhausted, and she die undelivered. Under such circumstances as these, I should recommend the use of ergot, whether the womb is dilated or not. With regard to the latter occurrence, where the placenta is attached over the os uteri, we know that an alarming hemorrhage will take place before delivery, for the womb cannot be dilated without separating the placenta from its attachment, and the more speedily delivery is accomplished, after this comes on, the greater will be the chance of the mother's surviving. I know it is recommended in such cases to dilate the os uteri, artificially turn the child, and deliver by the feet. If this operation is dexterously performed before the woman's strength is much exhausted, she may survive; but most of the cases which have come within my knowledge or hearing, have terminated fatally. This probably has been in consequence of delay. The hemorrhage generally commences without pain in the latter months of pregnancy, before her expected

period has arrived. The common means to check it are made use of; such as rest, cold applications, &c. These may prove beneficial for a while, but the hemorrhage will return and return, and perhaps each successive time without pain. Manual assistance is generally delayed until her strength is so much exhausted, that she sinks oftentimes during the operation, or in a few minutes after. In these alarming and almost desperate cases, would it not be better to give the ergot, and produce pain before the hemorrhage has so prostrated the powers of life, that neither the ergot nor manual assistance will save her. Gentlemen of the faculty, I suggest the idea for your consideration; but should a case of this kind fall under my care, I would early give the ergot, and after pain was produced, render such manual assistance in dilating the os uteri as might be necessary.

Secondly. The ergot is indicated, and may be given to those females that are subject to hemorrhage immediately after the expulsion of the placenta. Some women are peculiarly liable to this occurrence. Several cases of this kind have come under my observation, and in one female it occurred three times successively after the expulsion of the placenta. These cases are always troublesome, and attended with great danger. The cause of this hemorrhage must be a want of contraction in the muscular fibres of the womb, and I think it would be proper to give the ergot a few minutes before the child is expelled.

Thirdly. In the early stages of pregnancy, when a profuse hemorrhage comes on and abortion appears to be inevitable, and the ovum is not expelled for want of strong pains, I think the ergot might be advantageously given. Cases of this kind frequently occur in practice, and they become alarming and dangerous in proportion to the violence of the hemorrhage and the absence of pain. The strength of the patient is soon prostrated, and if she survives, it will be several weeks before she is restored to her usual health.

Fourthly. In restricting the use of ergot in preternatural presentations, I excepted breech and footling cases. Here it is

well known to those who are conversant with cases of this kind, that children are sometimes lost in spite of all our efforts to save them, and generally for want of quick and powerful pains after the body of the child is expelled. If the head is retained a few minutes in this situation, with the funis compressed, and the circulation interrupted, the child will be lost, and it is not in our power to extract it without pain, unless the head is small and the pelvis capacious. A footling case I consider more dangerous to the child than a breech presentation, because the os uteri and external parts will not be so completely dilated in the former as in the latter case, and of course the head will be longer retained, and will require more and stronger pains to expel it. In breech cases I believe it would be advisable to give the ergot after the os uteri is fully dilated, and before the breech of the child is expelled, and in footling cases before the feet are far advanced.

Fifthly. The ergot may be advantageously given in all cases of arrest where the head of the child has descended into the pelvis, the os uteri is dilated, and the external parts appear to be relaxed, but for want of pains it is not expelled. Many cases of this kind have come under my observation, where the pains have been strong and forcing, until the os uteri was dilated, and the head had descended into the pelvis, at which time, although the woman's strength was not at all impaired, they would cease or become so feeble that the child would be retained until the ergot was given, or it was extracted with the forceps. Before the use of ergot was known, in one case of this kind, I waited twelve hours for pains to expel it. I then applied the forceps successfully, and was afterwards censured by the patient for waiting so long before I relieved her. In these cases, which not unfrequently occur, especially with women who have had many children, I think it will be far better to give the ergot, than to keep the patient restless and uneasy for hours waiting for stronger pains.

Sixthly. There is another alarming and dreadful disease to which pregnant women are liable, and in which I *think*

ergot may be serviceable. I mean puerperal convulsions which take place before delivery. These convulsions sometimes come on suddenly before any symptom of labour has appeared. At other times, they come on in the course of the labour. In either case, large and repeated bleedings will be necessary, but the sooner the woman can be safely delivered of the child, the less liable will they be to return, and I believe they always do return until delivery is accomplished, and sometimes afterwards. I have seen them come on at seven months, and at the full period of nine months without any preceding symptoms of labour. In both cases the convulsions continued until the women were delivered. In the former case they continued twelve hours with a convulsion every hour before any labour pains were perceivable. After that period she was delivered, and had no return of them. In the latter case the convulsions returned without any pains or dilation of the womb, but not so frequently as in the former case, and continued forty-eight hours. She was then delivered, and although she had no more convulsions, she died the fourth day afterwards. I mention these cases to show the length of time that puerperal convulsions may continue without any apparent labour pains. If the ergot in these dreadful cases will produce uterine contractions and shorten the disease, it certainly ought be given. I acknowledge that I have had no experience of the beneficial effects of ergot in this disease, and therefore cannot confidently recommend it, but should another case of this kind fall under my care, I would give it without hesitation after copious bleeding, and I have very little doubt but that it would concentrate all the misplaced pains upon the uterus, and restore it to its proper action.

Seventhly. Ergot may be given with advantage when the funis umbilicalis descends before the head of the child. This I believe is not a frequent occurrence. During a practice of near thirty years, I have never had but six cases. Four of these terminated fatally to the child, in consequence of the funis being too long compressed after the head had descended

into the pelvis. I have never found any effectual mode of returning the funis, and retaining it until the head was expelled, and I do not think it is practicable. Some recommend turning the child, and delivering by the feet. This is not practicable after the head has descended into the pelvis, and I think not advisable in any stage of the labour, for it would be a painful operation to the mother, and afford but a small prospect of saving the child. It the first case alluded to above, the child was born alive in consequence of the small size of the head, the circulation being interrupted only during the pains. The last was saved, I believe, by the administration of ergot. When I discovered the funis before the head of the child, the membranes were ruptured, the pains slow and lingering, and the os uteri nearly dilated. I immediately gave twelve grains of ergot. The pains soon became strong and frequent, and continued so about ten or twelve minutes, when the child was expelled alive. The ergot I think ought to be given as soon as the os uteri is fully dilated, that the pains may become strong and frequent, while the head is passing through the pelvis; during which time the circulation in the funis is entirely interrupted, unless the head is very small, and the pelvis capacious. It may not be amiss to observe, that if no pulsation is discovered in the cord during the examination per vaginam, we may be certain that the child is dead, and must be contented with permitting the labour to proceed as if the funis had not descended before the head.

ART. VI. *Case of* INFLAMMATION *of the* THECA VERTEBRALIS. By J. KEARNY RODGERS, M. D. *Surgeon of the New-York Hospital, and the New-York Eye Infirmary.*

——— BROWN, a coloured seaman, aged 25 years, was admitted into the New-York Hospital, April 19th, 1825.

About a week previous to his admission, he had been pushed, and fell backward over a bedstead, and he now com-

plained of pain in the back, more particularly in the lumbar region of the right side. There was nothing apparently urgent in his case; but he attracted the more attention, on being received into his ward, from his gait and general manner, which induced the supposition of his being intoxicated. To questions on this subject, he uniformly replied, that he had taken but a single glass of spirits (about 2 oz.) that morning. He complained of being heavy with sleep, and slept several hours immediately after his admission.

He had no pain, except in the loins, and that not very severe, nor much aggravated by pressure. His respiration was slow; pulse full, frequent, and rather hard; tongue slightly furred; bowels costive. The sclerotic of the eye had a deep yellow tinge.

He took that afternoon, a purgative of sulph. magnes. 1 oz. and antim. tart. 1 gr.

20th. His medicine has operated freely. At noon I found his pain was increased, with a full, frequent, and hard pulse. Skin, somewhat heated. He was ordered to be bled to ℥xx. and to take small doses of antim. tart. 7. P. M. The pain was relieved by the venesection, and the pulse reduced in fulness and frequency.

21st. Pain in the back again very severe. The pulse has risen. Fiat. v. s. ad xx. oz. Applic. cucurb. cruent ad lumbos. Contin. remedia.

22d. All the symptoms alleviated. Pulse soft and slow. Tongue moist, though slightly furred. Has but little pain. The blood taken yesterday is highly buffed and cupped. Cont. Rem.

23d. Patient makes no complaint, except of a slight soreness in the loins.

24th. Complains of chilliness, and considerable pain in the back. Pulse small, feeble, and frequent. Ordered to take warm catmint tea, to have sinapisms to the feet, and take aq. ammon acet. ½ oz. with tinc. opii gtt. L. At night, took pulv. Doveri gr. x. pulv. antim. gr. iii. M.

25th. Symptoms as yesterday, with alternate flushes and chills. Tongue dry and furred; skin dry and harsh; bowels freely open; discharge of urine free; has great anxiety; examined the spine and all the abdominal region, but percussion does not increase his pain.

26th. Has violent delirium, but not the least fulness of the vessels of the head, or unusual throbbing of the temporal arteries. Respiration very anxious; abdominal muscles very tense; legs drawn up; skin cool and dry; yellowness of the eyes increased.

In the course of this day he died.

Examination, about sixteen hours after death.

Surface of the body exhibited no unusual appearance.

Abdominal viscera, all of which were carefully examined, were sound. No congestion in any of the organs. Bowels distended with flatus.

Thoracic viscera, remarkably free from any diseased appearance.

Cavity of the cranium. The brain was firm. Very little effusion between the pia mater and tunica arachnoides. The ventricles contained about two drachms of serous fluid. The vessels under the dura mater, at the foramen magnum, appeared very numerous, and filled with blood.

Cavity of the spine. On cutting through the muscles, for the purpose of getting at this cavity, the right lumbar mass had the appearance of being slightly bruised. The dura mater was very highly inflamed. Pia mater appeared natural. Vessels of the medulla spinalis but little affected.

From this man's admission into the Hospital, to the 23d of the month, I saw nothing in his case, except what might naturally arise from contusion, the consequence of the fall. The pain in his back at times seemed out of all proportion to the other symptoms, and at this I was the more surprised, as persons of his colour do not often express their sufferings in strong terms, unless other symptoms are present, which of themselves would give the medical man a correct idea of his

patient's condition. At the latter date, he had so far recovered, that he considered himself well.

On the 24th, there was great anxiety, which was strongly marked in his countenance ; this was increased on the following day, and on the 26th there was violent delirium, for which I could not account, by reference to the previous symptoms.

For more than twenty-four hours before his death, I was convinced that event would take place, but my opinion was formed more from the aspect of his countenance, than from any other evidence of disease ; and it strongly reminded me of that state of yellow fever, where a glance at the patient's face d oes more towards forming the physician's prognosis, than all the collective symptoms.

ART. VII. AN *attempt to ascertain the value of the* VACCINAL VIRUS, *as a means of lessening the susceptibility to variolous diseases, with remarks on the most probable origin and nature of the small-pox.* Read before the County Medical Society of New-York, April 11, 1825; by FELIX PASCALIS, M. D., Fellow of the College of Physicians and Surgeons, &c.

Nec pluribus impar.

TWENTY-FIVE years have elapsed since the process of vaccination was first successfully employed in this part of the new world, as a preservative against the small-pox. Its having already been approved of by several European governments, which successively adopted it, concurred to place it beyond the control of prejudice or of individual opposition ; indeed, it may justly be said, that the unanimous opinion of the medical and civil authorities have long since enjoined it upon all civilized nations. The public confidence in this prophylactic has thus far never been shaken, because no application of the vaccinal virus has been made in the way of experiment since the period of its introduction, and afterwards tested by the *artificial* small-pox, without its

virtues being fully acknowledged. On the other hand, the few exceptions noticed from year to year in the general reports of Tennerian institutions, were always brought forward with satisfactory explanations of their occurrence. Among the few last opponents of this admirable discovery, there were simply doubting physicians, and others, whose strongest argument against vaccination was, that its *constitutional influence must wear out by age;* meaning, either that it could not be depended upon in the human system, but for a certain period of years, or that the virus itself after circulating through a great number of persons, becomes inoperative or inert, and should be renewed from the animal which first furnished it. Nothing can furnish stronger evidence of the value of this beneficial process, than a reference to the bills of mortality, in the dense population of London and Paris. Philanthropic minds have, in consequence, rejoiced, and sincerely congratulated our profession on the subjugation of one of the most terrible and loathsome diseases.

Before I proceed in my investigation, I must say, that during the long period just mentioned of the established success of vaccination, a few exceptions have occurred which have given just cause for public alarm. These were partial or general epidemic attacks of the small-pox in some of our populous cities, as Philadelphia in 1802 and 1823, Baltimore in 1822, New-York in 1815 and 1821, besides other seaport towns, and the inland cities of Lancaster, in Pennsylvania, and Albany the seat of government of this State. Nor are there many capitals of Europe which have been more fortunate, or more exempt from such visitations. That of Norwich in 1819, as described by Sir John Cross, was appalling by its mortality. Other epidemics described by Dr. Monroe, and Mr. Hennen, and by Dr. Thompson of Edinburgh, during the succeeding years, were also very severe, and like our last epidemic, were attended by other kinds of *modified variola.* A like prevalence has also taken place in France, the authentic accounts of which from Marseilles and Bordeaux are in our possession. In each of these recorded

and recent occurrences, some kind of varicella, or other modified form, has simultaneously prevailed, such as the *chicken-pox*, the *swine-pox*, and that which has been called varioloid. Of the appearance of the two first with the small-pox, we have the following documents. 1st, A report drawn by order of our medical society, and published in 1816. 2d, A report to the Royal Medical Society of Bordeaux in 1822. 3d, A very interesting narrative of the epidemic in Albany, 1824, by Lewis C. Beck, M. D.* Of the last form of mitigated variola, we shall hereafter give sufficient documents.

It has been also satisfactorily proved, that with whatever aggravated symptoms the small-pox has broken out, it was, with hardly an exception, among subjects unprotected by previous vaccination, or by inoculation, while the accessory variolous disease always obtained among a great proportion of individuals who had been subjected to either one or the other of these processes.

These events have of course placed the preservative power of the kine-pox in a very different point of view from that with which we heretofore have regarded it, and even contended for its universal adoption. We have been in a great measure discouraged, from the fact that by a fair retrospect since the year 1809, to this time, it appears that the proportion of cases of small-pox, succeeding vaccination, received and treated in a London hospital, has been at least as one to three and a half! [Vide G. Gregory.]

There are many who have supposed that the varioloid after vaccination, and the chicken-pox, were diseases different from the small-pox, and not at all to be controlled by it. Others perfectly versed in the etiology of both kine-pox and *variola*, have confined the influence of the former in the constitution to the mitigation of the inflammatory symptoms of the latter.† A few European authorities have contended that the varioloid

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* New-York Medical and Physical Journal, No. 13.

† Vid. G. Gregory, Physician to the Hospital of St. Pancras, London.

of our days could not have existed before the cow-pox, like the chicken-pox and swine-pox, two sorts of varicella anciently known and analogous, and that there could be no hesitation in recognising the varioloid as the swine-pox, instead of being a modification of the small-pox.*

Setting aside, therefore, all hypotheses, and the opinion also of the degeneracy of the properties of the vaccine virus by age, let us examine whether our difficulties, and the mystery of the Jennerian prophylactic, are not to be accounted for by the twofold character which appertains to the small-pox, viz. that of an *artificial*, and that of an *epidemic* disease. This has never been adverted to in relation to the influence of vaccination.

A few questions on the nature of the small-pox, in order to elucidate its adventitious epidemic form, and distinguish it from that which, by our instrumentality, can be renewed at pleasure, are at present indispensably requisite.

1st. Is the frequent revival of the small-pox, or its continuation in populous countries, governed only by the common laws of contagion?

2d. If this fomes can long remain latent and inert, can it ever be destructible during any period of time?

3d. Would it not be rational to suppose that the *variola*, like many diseases of a malignant or pestilential nature, originates from certain combinations of animal effluvia, such as those that are ascertained to generate febrile exanthematous diseases, &c.?

None of these problematic questions have ever been resolved. The affirmative of the first, which during so many ages, has been implicitly believed, is no doubt the most unphilosophical. The introduction of the small-pox by the *Saracens*, who had received it from the natives of Arabia, when they invaded the Christian states on the Mediterranean coasts of Europe, twelve

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* French Report to the Royal Medical Society of Bordeaux, by Mons. Dupuy, M. D.

or thirteen hundred years ago, is not a proof that the same virus could not since have often been *home-engendered*, in other parts of the world, and then be imported into the bosom of any ancient or modern nation of either hemisphere. That belief, which so exclusively points out the torrid zone, or the birth-place of Mahomet, as the origin of the small-pox, appears absurd enough, when we afterwards find, that by its contagious nature, it has been propagated not only through the temperate regions, but has become congenial to the polar climate, where it once devastated the peninsula of Kamschatka, and the island of Iceland. From time immemorial, it moreover appears to have existed in the southernmost parts of Tartary and China, and to have proved a scourge to all races of men, in every latitude on the surface of the earth.

The affirmative of the *second question*, implying the existence of the variolous virus during an indefinite length of time, and in a latent state, as must have been the case during the long and healthy known periods belonging to thirteen centuries, is an inference absolutely contrary to the laws of nature; if that poison was identically the same which had its origin in 570,* how could it have been diffused all over the world and exist to this day, unless its fomes is of a nature indestructible under every possible circumstance? (and then it would always prevail) yet time, we know, destroys every thing.

To the affirmative of the last question, we can easily yield our rational consent and belief. Never was the doctrine of spontaneous generation of diseases better evinced by observation, so well detected in atmospheric, gaseous, or impure exhalations from the earth, or from other sources, and illustrated by pneu-

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* The most ancient document proving the existence of the small-pox, is that of Bishop Marius, who died in 590, *anno* 570, *morbus validus variolæ italiam galliamque affecit.* (Vid. Valentin and Dezoteux traité del' inoculation, page 24.)

matic philosophy, than it has been in our days all over the world.

In relation to the small-pox, facts are not wanting to prove that its endemic prevalence has sometimes followed the most healthy seasons among dense populations; in consequence of disturbed graves, prostrated armies, fields of slaughter, and in harbours and ports from crowded battle ships. Whether it arises from local causes, or *from its dormant or latent fomes*, the small-pox constitutes an epidemic, whose primitive character possesses all the virulence and malignity belonging to the disease in any situation. It differs therefore from that *variola* which is artificially created by inoculation. The mild and benign march of this artificial small-pox, is not a matter of chance. The safety with which it runs its stages, had anciently caused its adoption among those Asiatic nations, who not only wished to provide for the preservation of life against the fatality of the natural or epidemic disease, but against the mutilation of the face and complexion. Besides the Georgians and Circassians, we find, that from time immemorial, the Chinese protected themselves in a like manner by the practice of inoculation. The English nation borrowed it from Turkey, at the commencement of the 18th century, and spread it in Europe and in their colonies, where it has been universally resorted to and encouraged by medical, as well as by civil authority during eighty years. The beneficial results of this practice, were and have been acknowledged and extolled in every point of view; and its mortality, compared to that of the natural or epidemic small-pox, was long ago ascertained in London to be as one death out of 100, is to one out of 5. It was ultimately superseded by the process of vaccination, which was expected to do away every possible source of the contagious poison of the small-pox; but the victorious prophylactic of Jenner was only tested against the artificial disease!

The variolous fomes can also exist under different and modified forms: these have been designated by the generic name of *varicellæ*; two of them, called the *chicken-pox* and the

swine-pox, have been long since described by Heberden, Huxham, Vogel, and by Mons. Gandager de Foigni,* as specific diseases differing from the small-pox, especially because they are attended with no difficulty nor danger before nor after an attack of small-pox. This opinion has not always obtained in modern times. An American physician, Dr. Lewis C. Beck, of Albany, has among others satisfactorily proved the identity at least of the *varicella chicken-pox* with the small-pox. We have seen in this city, many successful attempts at communicating, by inoculation, the chicken-pox which prevailed with the small-pox during the autumn of 1815: and it is now admitted, that a case of varicella may be so far aggravated, as to be similar to an ordinary distinct and benign small-pox. We must then make one class of the *varicellæ*, or of the more or less modified variolous diseases. This mode of reasoning is so far proper and correct in the present investigation, since a new form of modified small-pox, or *varioloid*, has of late years much engaged the attention of medical observers in Scotland, in the United States, and in France, who have not hesitated to declare it a form of the small-pox, *modified by previous constitutional influence of the vaccine virus.*

This opinion has also gained great support among us, and we might infer, I think, that from some striking similarity between the two named *varicellæ*, this new form could be classed under the same generic name, as a third kind; perhaps the highest in the scale of *varicellæ*, and the nearest to the artificial *variola*; indeed a striking parallel can be made of the varioloid with the swine-pox, the first differing only in degree from the latter.* Again, as it will appear from facts hereafter to be related, the inoculated small-pox (or the

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* Vid. his Traité de l'Inoculation, 1775. p. 368.

† Correspondence and MSS. authority.

artificial) is not a sufficient protection against the *epidemic*: I beg leave to offer the subjoined table of variolous diseases, arranged under two classes.

1		2	
VARICELLÆ,	chicken-pox,	VARIOLÆ,	artificial inoculated small-pox,
	swine-pox,		epidemic small-pox.
	varioloid,		

It is with this scale in view that we can be better able to point out the variety on which the influence of the vaccine disease is expected to be partial or complete.

Of the two first, which are transient and do not induce mortality, it was never a desideratum to ascertain whether vaccination is a prophylactic. Experience has nevertheless shown that they are of rare occurrence among vaccinated subjects, unless they exist simultaneously with an epidemic small-pox, and become a modified form of the same, which all protected subjects still remain liable to receive. The third, which is now denominated the *varioloid*, it is contended, was not noticed before the existence of vaccination; but it is so far under the control of this preservative, that it is a part of our investigation to prove, that it is *epidemic small-pox* itself, perfectly modified by the beneficial influence of the vaccine disease.

There remains, therefore, but the inoculated variola or *artificial* small-pox, which could after long observation vindicate the efficient and preservative power of the vaccine virus, because in it there is not that greater proportion of malignity and virulence which in vaccinated subjects can still produce the varioloid.

To account for this pathological phenomenon in variola, we need but to advert to the variety of pustules by which it is so easy to prognosticate the favourable issue, or the fatality of the small-pox.

There are five sorts of variolous pustules, besides certain aggravated symptoms which are sometimes connected with them. We divide them into two orders; all possessing the

character of small-pox, or of the variolous diseases, while those of the second order are restricted to the epidemic variola.*

FIRST ORDER.

No. 1. The most ordinary kind of pustule is the *cutaneous*; consisting of two varieties, the *distinct* and *confluent*: it rises from the cutis vera, and not from the epidermis, is of a spheroidal form, filling with a transparent lymph, but rapidly becoming purulent and of a yellowish colour; it flattens as it progresses, presenting a depressed point in the centre; if pricked, it discharges a white gelatinous fluid; if a too great number of these pustules are clustered in masses, and run into each other on the face and breast, they take the name and have all the danger of the *confluent* small-pox, and may be injurious to the eyes, features, and complexion, if not decidedly fatal.

No. 2. The *tubercular* pustule, rises also from the skin or cutis, and deeper than the preceding; it is smaller, elevated, opaque, hard, and encircled with redness; it is conical, and shews a vesicle on the apex, which fills and extends downwards, frequently drying before it is full. These pustules are unequal, and do not desquamate at their base; they stain the skin of a brown reddish colour, and are mixed with the cutaneous pustules, chiefly on the face, and on the hands and feet; they predominate in the artificial small-pox, and were seen in almost all cases of the varioloid of New-York; they give no difficulty in the treatment, nor prognosticate any danger.

No. 3. Is the *dry-pock*, thus called from its dryness, and the rapidity with which pus is formed. It is spherical, never flattened nor dimpled, nor is it in any case exposed to ruptures or oozing, nor attended with secondary eruption; it mixes with the cuticular pock, and is said to have appeared often in the

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* Of the various authorities which can be consulted on this subject, I could not point out any more recent and satisfactory, than the treatise of Messrs. Dezoteux and Valentine on the small-pox, and also the Philadelphia Journal of Professor Chapman, No. 14. page 431

varioloid of Philadelphia. The same is common in the artificial small-pox, especially on the limbs punctured by inoculation, and in the parts exposed to external air, it is also of the most benign nature.

SECOND ORDER.

The following pustules being of a bad character, are the most dangerous, and occur in the epidemic variola only. They have been noticed by the above named writers, and by Dimsdale and Sutton in England.

No. 4. The *miliary* pustules, are preceded by turgidness, pain, and dark redness of the skin. They gradually appear like innumerable raised points, giving to a close touch of the hand, the harsh feeling of a piece of shagreen. So many pustules pressed against each other, are obviously checked in their progress to maturity. A dulness of perception, and a remarkable degree of torpor soon pervades all the functions of animal life. No care nor remedy can avert impending death on the 7th or 8th day, which leaves the body already gangrenous in proportion to the raising of the pustules, which may have taken place. I once saw a case of the kind effectually relieved by a spontaneous vesicular eruption over the miliary pustules, of large bags of lymph, which are known by the name of *pemphigus* or *pompholyx*. Not a few victims fell under it during the last epidemic of New-York. I foresaw the same fate in the person of a female aged 20 years, healthy and robust, whose fever was moderate, and the eruption rather similar to prickly heat, or to that of erysipelas.

No. 5. Is the *vesicular pustule*, deriving its name from the singularity of its formation in masses or clusters of small vesicles, which slowly proceed to maturity, and although they are seemingly confluent, do not communicate with each other, each forming a separate cell, from which no adhering bag can, by pricking, be emptied. The fluid is here clogged, and its maturation is slow and difficult. Hence that kind of eruption is full of danger, and frequently proves fatal, but, like the preceding, is seldom produced by the artificial small-pox, and we have never seen it in the varioloid.

No. 6. Is a distressing combination of symptoms incident to the disease, and not exclusively marked by any kind of pustules: it is marked by the formation of swellings of the legs, of glands and joints, of imposthumes in different parts of the body, even of caries of the bones, and of severe ophthalmiæ. These were observed and accurately described by Doctor Lewis Valentin, in the epidemic small-pox, which broke out in Norfolk, Portsmouth, and Princess Ann Counties in Virginia, in the year 1795. This excellent physician adds, that the inoculations which were resorted to in order to check the alarming progress of the calamity, participated in these malignant operations of the variolous poison, though chiefly among the blacks, and that he even saw infants with the collar bone projecting through the skin. The mortality was great, owing to the complication of abscesses, ulcers and tumours, which could not always be successfully managed by the general treatment of the small-pox; a similar complication of malignant symptoms took place in this city during the last epidemic, under the care of Dr. Samuel Akerly, in a pupil of the Deaf and Dumb Institution. The Doctor was obliged to open two large abcesses in both shoulder joints; another took place, which afterwards was discussed, and the boy recovered.

This statement of causes and effects, much abridged from what has been collected by the best judges in ancient and modern times, may satisfactorily demonstrate the greater malignity and virulence of the epidemic small-pox over the regular and ordinary course of the same disease, when excited by inoculation. It also evidently shows that the influence of the vaccine virus in the human system, rendering it unsusceptible to the latter, is not adequate to the repulsion of the former, when arrayed with all its most deadly symptoms. It can, however, modify the intensity of its operation; it divests it of its particular fœtor, of its secondary fever, of its dangerous pustules and inflammations, and transforms it into a perfect *varioloid*. This *secondary* attack is not altogether mysterious or incomprehensible. if we would reflect for a

moment, and compare it with what takes place in a body labouring under a full and well marked attack of natural small-pox, it is, that when safely conducted to the last eruptive stage, and when all critical efforts seem to have been completed; still by the presence, and from the unavoidable absorption of a great number of pustules, the patient is subject to a secondary fever, to a secondary eruption and formation of pustules, which equally prolong his sufferings, and require the care and attention of his physician.

It may be expected that in concluding this investigation, we should acquaint our readers with the history of our late epidemic small-pox and varioloid, as they occurred during the years 1823 and 1824, in the cities of Philadelphia, New-York, and others, giving the results of mortality by the one, and the vaccinal failures by the other. Our present limits will not admit these interesting details, already authentically recorded in our Medical Journals. I shall select for the present purpose, the subjoined cases from my own observation, and that of others, such as will sufficiently illustrate the first and principal subject of investigation expressed in the title of this paper.

Cases which occurred in New-York during the epidemic small-pox of 1824.

Professor M'Neven informs us that a young gentleman, his pupil, caught the disease at a source which had affected a great many students of the college. He had been vaccinated in his infancy by the late Dr. Kissam; nevertheless he sickened with considerable violence: his case was, however, considered as the varioloid, with brisk red spots, and then pustules all over the body. Three more in the family who had been vaccinated by the same physician took the disease. On the sixth day, Dr. M. used a little of the lymph from a pustule on his student to inoculate a healthy boy with, in the family, who had neither been vaccinated nor inoculated, and

this progressed regularly into a fine distinct and benign small-pox; in fine, the mother of the pupil, aged 40 years, who had been inoculated in her childhood and had the disease regularly, took it again on this occasion. It appears by this remarkable occurrence, that four cases of epidemic small-pox were all rendered mild and without danger by the influence of vaccination, and the other by that of the small-pox, which demonstrates that both possess the same degree of constitutional influence in relation to the epidemic small-pox.

A medical gentleman of this city experienced a violent attack of pneumonia, with a great determination to the head, and it became necessary to take repeatedly from him, a large quantity of blood. With this and other means, the patient's disorder was subdued, but he was left in a very reduced state, from which he was scarcely recovering, when yielding to an urgent professional call, he was carried to a house where the small-pox yet existed. He was shortly after laid up again with an alarming fever, until a considerable eruption broke out on his face and breast, which proved to be variolous pustules of a distinct and tubercular kind, and clustered together in very red spots, creating an intolerable degree of pain. This varioloid, which progressed tediously, was in this subject a secondary attack, he having had the inoculated small-pox at the age of ten years.

Two sisters, Germans, aged 18 and 20, born in Westphalia, and inoculated with the small-pox during their childhood, still bearing good scars on their arms, lived in the same family, industriously engaged in their capacity of house-servants, and where they experienced no other indisposition than that incident to a change of climate. They separated before the epidemic took place, and shortly after, at no great distance of time, sickened with the variola, each in their respective places of residence, in which not any such case had occurred. The oldest experienced a somewhat confluent varioloid; the second, had a violent fever which required venesection, accompanied with a mixed tubercular eruption. They

both recovered on the 18th or 20th day of the disease. These cases are instances of the activity of the epidemic, equal in strangers as in natives, and in either kind of protection, by the inoculation or by the process of vaccination.

IV. We see in the following, a reciprocal and simultaneous influence of the two diseases upon each other; the one by exciting the operation of the vaccine virus, which was dormant in the subject, and the other by changing the epidemic variolous matter, into simple varioloid. From which it results, that both the vaccine disease and the *artificial* small-pox, can equally control the *epidemic variola.*

I was desired to vaccinate a little girl of 6 or 7 years of age, lately arrived from Louisiana, and I attempted to do it three times without the least effect, always at 6 or 7 days interval between each operation. Apprehending that my daily attendance upon several cases of small-pox, might be the means at least of exposing the child to an attack of the existing epidemic, I requested the parents to permit her to be inoculated, as all circumstances rendered this measure perfectly justifiable. I used fresh lymph, from a lad of 18 years of age, just labouring under a heavy confluent small-pox, yet a very hopeful case. At the usual time, the little girl sickened, and at the same time, a fine vaccine pustule with an areola, arose on the spot where the virus had been inserted. A few days after which, a second eruptive fever brought on a gradual varioloid eruption; the pustles were rather small, not numerous, and were generally of the dry and tubercular kinds: her recovery was rapid and perfect.

It must now be confessed that the march of the human mind towards the knowledge of the natural laws which govern one of the most formidable diseases, has been to this day restrained or retarded by an opinion, which, without any foundation, has obtained the belief and assent of all nations; to wit: that the small-pox is specifically *unique and sui generis*; the same which long ago was imported from Arabia. From this it was afterwards inferred, that by the universal

adoption of the Jennerian process, the small-pox must be eventually eradicated from the surface of the earth. That this philanthropic and benevolent desire has not and cannot be realized, twenty-five years of experience has already shown us. This disease has not disappeared from a single populous district or nation, and uninterruptedly exists in all the largest cities of the world. Should it be granted, however, that by the vaccine process, millions of infecting sources of that virus have been suppressed, mortality by the small-pox greatly diminished, and that very few sweeping epidemics have occurred, it nevertheless appears certain that there remains some other sources of the disease, which the Jennerian prophylactic cannot reach, nor effectually control: or else there could not have been any epidemic small-pox in the midst of large populations, among whom the practice of vaccination is most rigidly enforced, nor such a number of vaccinal failures amounting even to thousands, been reported in a single populous city.* Such existing sources it is our duty to investigate: The following short attempt, I confess, may be deemed preposterous; but I inform my readers, that I cannot produce better arguments or proofs, than those that are furnished by logical analogy and analysis. To those to whom they may not appear satisfactory, I apologise, by holding the vaccine virus as an invaluable discovery, not only by its influence against the small-pox, as it has been explained and represented, but because it is a precious key to unlock the hidden and mysterious source of the small-pox, and which may also guard the human race against its epidemical visitations.

Nothing is found in the science of therapeutics that could, by analogy, be compared to the power or influence of the vaccine virus, except it be that of the small-pox itself, of which it may be the prophylactic. But as it has been proved a com-

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* Vide Dr. Chapman's Journal of Medicine, &c. No. 14.

plete preservative against the artificial disease, and an incomplete one against the epidemic, there may be inferred from this unexpected result, a very conclusive analogy, which would hold good, if epizotic diseases when existing in epidemic form, could affect or endanger the human constitution; for then a bovine or vaccine epidemic, might at once, by priority, implant in our system an absolute insusceptibility to the human pustular pestilence. Now if analogy is in all speculative sciences, and especially in that of mathematics and algebra, the very rationale by which we may progress from the known to unknown proportions or quantities, the above alleged hypothesis is admissible by way of comparison, from that law which limits the power of the vaccine virus to a preservation against the artificial small-pox. Furthermore, as there are no three or four diseases that present more striking analogies than we find between cow-pox, the varicellæ, and variola, it is next to a theorem, that by the one which is perfectly known to us, we should come at the true nature of the other; then to its source, and perhaps to the periods or circumstances of its formation.

Proceeding from this analogy to another series of attributes appertaining to the cow-pox, we find that this virus is a diseased matter secreted from the body of a cow, or from the hoof of a horse, on the authority of Jenner himself, of the celebrated Dr. De Carro of Vienna, and of the Dr. Chevalier Valentin. Their researches on the subject should not be passed unnoticed, in treating of a contagious matter which has not only been traced from one animal to another, but has been also transferred to different species and from them again to the human subject, in whom the *equine* virus has shown the same effects and efficacy; nay, it has been so much confounded with the vaccinal matter in certain countries, that Dr. De Carro did not know but the *equine* matter had there superseded the *vaccine!* This fact being particularly interesting, we refer the reader for further details to the notes 6, 7, and 8 in the "*Notice Historique sur le Docteur Jenner*,

&c., Nancy, 1824. *Second edition, by Lewis Valentin, M. D. Knight, &c.*"

2. This virus being absorbed by the human body, after several days, a small quantity of lymph is assimilated to it, which forms one or more pustules, retaining the same powers as that which originally came from the cow.

3. And when the evolution of this virus is completed in the human constitution, it is, in every respect, as far altered or influenced by the operation, as it would have been by the inoculated or artificial small-pox; although both diseases may be diversified in point of duration, of nature, form, and quantity of pustules, it is also true that one only symptom is required for the efficiency of both, that is, eruptive fever; with this difference, that in the small-pox, it takes place at the commencement, until the eruption is formed, while in the vaccine disease, fever is manifested at a later period only. If now, we consider that no mineral nor vegetable poison is known to be absorbed by the human body, and that the power of absorption and reproduction are confined to animal matter and animal poisons, such as give rise to hydrophobia, syphilis, plica-polonica, herpes, psora, lepra, variola, kine-pox, and other contagious diseases; and that there is no kind of analogy between any two of those diseases, the two last excepted; it is not only justly inferred, but demonstrated, that the small-pox is an *animal virus*.

The next question would be to ascertain from what animal being it proceeds, whether from the brute creation, or from the human race, or indiscriminately from both. The double origin of the vaccine virus, to which we have already adverted as possibly of an *equine* nature, and also the singular pustular disease of the sheep kind, called the rot,* (in French le Claveau) might promise a clue, especially as the latter bears some imperfect resemblance to the human variola;

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* Med. Repos. N. S. vol. II. p. 228.

but let us drop any such conjecture, and by attending only to the fact of extensive epidemics having taken place in almost every populous nation and city, we may learn the general circumstances under which epidemic diseases are formed. One is the atmospheric constitution of seasons, of heat, and of moisture; the second, we designate as the miasmatic exhalations from the soil or other localities, such as marshy grounds, stagnant waters, and dried ponds, &c.; and lastly, the accidental conditions of dense assemblages of human beings.

The extensive inhabited regions which have sometimes been ravaged by pestilential fevers, as happened in the whole Roman empire under the two Justinians, in the 7th and 8th centuries, were certainly excited by an universally deleterious state of the atmosphere. The same cause presided and prevailed no doubt, in the 16th century, when all possible forms of influenza, catarrhs, and fatal *anginæ* ravaged all Europe, by the sweating sickness in England, by the sneezing sickness on the continent, and by the croup in Italy. But such universal causes have never been applicable to the epidemic small-pox; it never was simultaneous over extensive regions; it does not invade many populous towns or districts at the same time; it has always been successively and at different dates in winter, in summer, in frozen regions, and under the torrid zone, in dry and humid situations, and from pole to pole, a scourge to mankind, parcelling out its attacks amidst the joys and comforts of previous health, suddenly and unexpectedly diffusing its powers throughout all ages and classes of society.

The miasmatic exhalations of the earth have long been known to be the ordinary or accidental sources of a catalogue of endemic or epidemic diseases and plagues. The Hebrews had their Leprosis, the Greeks their Elephantiasis, the Polanders have their Plica Polonica, the Savoyards their Goitre, and the Italians their Malaria, &c.; and what a variety of fevers of a bad character are endemial in the vicinities of our great lakes and rivers! But not one defined or bad quality of land or soil has ever been observed to promote

epidemics of small-pox more than another ; no one race nor tribe of men, nor one climate, nor season, nor one latitude more than another ; nor is there any exception in society or in the savage life, in their aliments or occupations, in the toils or hardships of labouring classes, or amidst the refined luxuries and comforts of the rich, in the humble huts of the poor or the gorgeous palaces of the great. And no age, in fine, can be said to be more congenial to or productive of this disease than another. Louis the XV. king of France, after the daily fatigues of hunting, experienced an attack of varicella, when 28 years of age, and 46 years after, he died of the most horrid and malignant attack of the small-pox.

The third condition or circumstance productive of general epidemics, and that only which has attended those of the small-pox, is unquestionably that of large and dense populations. Hence, it has always been hovering in camps, in fleets, and prisons ; it is frequent in all commercial cities, and is never extinct in London, Paris, Lisbon, and Constantinople ; this specific matter, it appears, is formed or aggravated by an animal or deleterious effluvium, which, passing from man to man, from breath to breath, gradually acquires its elementary intensity, by which a single particle or atom of it, similar to leaven, excites a general ferment of the whole lymph in the human fabric ; but this terrible operation, which can so readily be averted or modified by the slight constitutional action of another animal virus, suggests to us that two concurring elements or causes, one remote in the living body, and which has not been eliminated from it, the other proximate, can, by the fortuitous accession and junction of impure animal effluvia, create the variolous poison with all its own attributes. This phenomenon appears neither so incomprehensible, nor so singular nor dreadful as that of *phthyriasis*. When the circulating lymph in the morbid state, and under some accessory influence of external heat, or filth, is brought to the last term of animal decomposition, and forms or creates a most horrid kind of vermine, which

is rapidly increased by continually succeeding generations, issuing from all the hairy surfaces, from mucous membranes and from purulent pustules. If that trivial adage might be indulged in here, "To see is to believe," I might add, *Quæque ipse miserrima vidi.* History informs us, that the divine Plato, Herodes king of the Jews, the dictator Sylla, and Philip of Spain, all died of that shocking malady.

There cannot be much doubt that the small-pox is an animal poison, exclusively proceeding from human beings, and that when prevailing as an epidemic, it is of a recent and fresh formation; and since it could not be traced to atmospheric constitution, as we have already demonstrated, nor to miasmatic exhalations, or other deleterious qualities of the soil, we must conclude from a series of striking circumstances, that it is a compound and morbid formation from human effluvia; it must then be reasonable to suppose that extensive infecting and invisible currents of the kind, cannot have a long existence under the vicissitudes of seasons, and the variableness of winds and temperature, although they may be often renewed in camps, jails, ships, hospitals, and burying places, as well as in all dense assemblages of human beings.

Another and last remark in conclusion, relates to the contagion of the small-pox, which proves to be so much more active, diffusible, and transportable by intermediary vehicles, such as the effluvia from clothes and other materials, than any other. Epidemic fevers of a bad or malignant character continue still to excite great controversy among the learned, and the heads of government, respecting their contagious power. I would only propose a final question, which has been illustrated by the above investigation; whether the *contagious property* of any disease incident to mankind, can not be peremptorily decided; first, by its nature as an animal virus; secondly, by its being absorbed into the human system; and finally, by the conversion or assimilation of human lymph into a virus of the same nature, and capable of reproducing the same disease?

Art. VIII. *On* Fissure *of the* Rectum, *attended with constriction of the anus.* By Alexander H. Stevens, M.D. one of the surgeons of the New-York Hospital.

In the Dictionaire des Sciences Medicales, article Fissure, and in the Journal Complementaire du Dictionaire, vol. 2d, Baron Boyer has described a disease of the rectum, which has not been noticed by any modern surgeon, except very obscurely by Sabatier in his Medicine Operatoire, and by L. Limonier in his Traité de la fistule a l'anus, published in 1689. He terms the disease "a fissure of the rectum, attended with constriction of the anus." He supposes that in consequence of hemorrhoids, or other causes of irritation about the anus, the sphincter is excited to violent action, by which, during the passage of hardened fæces, the mucous membrane at the lower part of the gut is torn longitudinally or parallel to the axis of the rectum; after such an accident, every passage of fæces, even if not hard, irritates the exposed surface, which by repeated irritation, becomes the seat of exquisite sensibility. The irritation thus excited keeps up, and augments the constriction of the sphincter, which reciprocally tears open the lips of the fissure. Such is Baron Boyer's beautiful pathology of a disease among the most painful to which human nature is subject. The remedy he proposes is as simple and certain as the pathology is beautiful. It is a complete division of the sphincter ani.

As this very distressing malady has, until very recently, been entirely overlooked by the English surgeons, and as it has not, so far as I know, been the subject of observation in this country, I shall offer a few remarks on the means of distinguishing it from other diseases with which it is liable to be confounded. The characteristic sign of fissure is a fixed pain in one point of circumference of the anus. On introducing the finger, which is always excessively painful to the patient, it is grasped very tightly by the sphincter, and a particular spot directly above the seat of

the greatest pain in the anus is exquisitely tender to the touch. The greatest pain is not during the passage of the fæces, but a little time afterwards, and unlike the piles with which it is often confounded, it is not relieved by the horizontal position. The patient on the contrary, cannot lie down during the time of the greatest suffering.

The subject of the following case is a middle aged gentleman, whose sufferings are detailed by himself.

"I have been for many years subject to the blind piles, but they have generally yielded in a few days to simple laxative medicines. Early in October last, I had an attack which I attributed to cold caught the night before and to costiveness. I had not the opportunity of taking the usual remedies for some days, and when I had recourse to them, I did not find the relief that I usually experienced from the use of them; the piles were inflamed externally, but besides the pain from them, I found a constant uneasiness more internally, which became very painful while walking; and I observed that I did not experience relief by remaining in a recumbent position. The pain continued to increase, and became excessive after walking a few hundred yards. I lived low, and took altogether a cooling diet. The external piles still continuing, (although not very much inflamed,) and the pain increasing, recourse was had to bleeding with leeches, which was frequently repeated, and afforded a little temporary relief. About the middle of January there was for two days a considerable spontaneous bleeding, which relieved me much, and I was so well for eight or ten days, that I thought the disease had left me; it however again returned, and with all the previous symptoms; again recourse was had to leeches, and after some time, all external inflammation disappeared, but the internal pain remained unabated, or rather increased, and seemed to proceed from one spot on the left side. I could not bear the introduction of an injection pipe. My stools were almost always painful, particularly if the least inclined to be costive, and were frequently tinged with blood. I was never entirely free from pain or uneasiness, and almost always about an hour after having been at stool the

pain began to increase, (even without taking any exercise,) and continued excessive generally from four to seven hours. During these paroxysms, I could not lie down, and was obliged constantly to be changing my position.

"On the 26th April, I submitted to the operation, and afterwards never had any pain that I might not justly ascribe to the wound, and to the means used for the stoppage of an hemorrhage which occurred four or five days after the operation. On the 16th day I went out of the house, and now I consider myself completely free of the complaint, and the wound is nearly healed up."

Dr. F. U. Johnson, his physician, who procured the account for me, says, "I have little to add to Mr. S——'s faithful account of his own case, than that when he applied to me, I considered his disease a severe hemorrhoidal affection, and persevered for some time in the most approved remedies for that complaint, but without any permanent advantage to my patient, whose sufferings were so severe, and at the same time apparently so irremediable, as not a little to distress and perplex me. Under these circumstances I consulted you, and was relieved at finding you adopt the same opinion with regard to the nature of the complaint, and pursue with some additions, the same course I had before tried. His symptoms still continuing the same, and his sufferings unabated, you at length suggested the probability of their being kept up by a fissure and spasmodic constriction of the sphincter ani; but on examination no such fissure could at that time be discovered; in eight or ten days, however, a crack or fissure became distinctly visible on the left side of the anus, the seat of all his pain. You then proposed Boyer's operation; a complete division of the sphincter; this our patient agreed to, and after a consultation with Dr. Post, who readily came into our views, it was performed in the course of the fissure, with what success appears from the statement of Mr. S. himself."

The operation consisted in dividing the sphincter ani with a straight bistoury passed up the rectum, and dressing the wound with dry lint pressed into its cavity.

REVIEW.

ART. I. *Transactions of the Medical Society of the State of New-York, for the year* 1825, *together with the Annual Address, by Alexander Coventry, M. D. President of the Society.* Albany, 1825. 8vo. pp. 64.

IN a previous number, we noticed the more important proceedings of the State Medical Society at its annual session; and we also presented to our readers, the eloquent and able address of its late President, Dr. Coventry. We should have deemed this sufficient, did we not believe that an examination of one of the documents contained in the appendix would be at once interesting and acceptable to the profession. The article to which we refer is the draft of an *Act further to amend the existing law regulating the medical profession.*

It will be recollected that the last law on this subject was passed in the year 1818, and between that time and the present, experience has shown that however valuable the enactments in this State are generally, yet they are chargeable with many imperfections and omissions. The attention of the State Medical Society was first drawn to this subject in 1822, in consequence of a memorial which had been presented to the legislature by certain professional gentlemen in the county of Ontario. Having been referred to the Standing Committee on Literature, of which G. C. Verplanck, Esq. was Chairman, it was by him communicated to the society, and the result of the reference was, the draft of an emendatory law. This was reported to the assembly, but no further steps were taken on it

during the session. In 1823, a similar law was again proposed, but rejected; and an application in 1824, proved equally unsuccessful.

We need hardly state to those who are in the least conversant with legislative proceedings, that these repeated rejections, or rather refusals to act on the subject, are far from being a positive indication of the deliberate sense of the representatives of our State. The hurry of business; the pressure of more leading or more local objects; the delay occasioned by the late period at which the State Medical Society convenes (late, we mean as to the introduction of bills) and the nature of the subject, disconnected as it is from political or party discussions; all have tended to prevent its receiving a proper share of attention.

At the commencement, however, of the present session of the legislature (1825) the prospects of its success were highly flattering. As in former years, so particularly in this, the draft received the unanimous approbation of the State Medical Society. The delegates composing that body and coming from every part of the State, appeared disposed to waive every topic that might tend to weaken the strong points of the bill; and after deliberately discussing each section, united in again presenting to the Legislature the *project* of a law, which is contained in the appendix above referred to. Its friends in that body were numerous and decided, and every thing promised a gratifying termination.

When, however, it was about to be called up in the Senate, a new obstacle, *as we are informed*, presented itself. It was urged that as the proposed law would materially alter the existing regulations concerning medical societies; and as the latter were corporate bodies, so in compliance with the general statute, a public notice during six weeks should have been given of the proposed amendments. This was sufficient to arrest all proceedings. We would speak of the objection with all due respect, but we must confess that we should as soon expect to have heard it offered against a law for the suppression of vice and immorality, or any other public statute. Though no-

minally an act to amend the law relative to medical societies, it is, in fact, an act to *regulate and improve the medical profession;* and until the present era of constitutional and legal scruples, has always been considered as such.

With a knowledge of this difficulty, it becomes those who are charged with the subject, to prevent its recurrence again impeding the progress of the proposed law. And at all events, however much the delay may be regretted, it still affords the members of the profession another year for discussing the subjects embraced in the amendments. It also enables them to witness renewed instances of the evils intended to be obviated, and thus we hope, it will produce increased and additional efforts to effect their removal. It is with the hope of drawing the serious attention of our brethren to the subject, that we submit this narrative, as preliminary to a notice of the proposed law.

It contains thirteen sections ; and the first is a repetition of the 20th section of the Act of 1813, which ordains that no person shall practice physic and surgery in this State without being regularly licensed, under a penalty of twenty-five dollars for each offence of which he may be convicted. But the *provisoes* of the old law are omitted in the proposed one. These are, first—that "no person practising without license, and not receiving any fee or reward for the same, shall be liable to the above penalty." This superfluous act of benevolence is so uncommon, and indeed so unnecessary at the present day, that it seemed hardly necessary to insert a statutory provision concerning it. But whatever may be thought of this, the second is the dangerous clause ; and under its broad license, great and irreparable mischief is constantly perpetrating. It is in the following words : "*Provided also*, that nothing in this act contained, shall be construed, to extend to debar any person from using or applying for the benefit of any sick person any *roots, bark, or herbs, the growth or produce of the United States.*"

We will remark in extenuation of the views of the Legislature which permitted this dangerous license, that our vegetable materia medica, some ten or fifteen years since, was far less

understood than it is at present, and in particular, the power of its more active articles. But at this crisis, when Medical Botany has been ably and minutely investigated; when we understand how many important and powerful agents our native soil produces, surely the continuance of this proviso is a permission to warrant the ignorant and designing to use the most deleterious instruments with impunity. A bare catalogue is sufficient to demonstrate this. Among our native plants, are the different lobelias, the arums, cicuta, stramonium, ergot, tobacco. But this is not all. The words of the law certainly include naturalized as well as native plants; and we may thus add to the list, digitalis, henbane, opium, and a number of others. Is it accordant with the principles of justice and humanity, thus to let loose among the community, individuals the most ignorant and brutal; who, in the absence of an honest occupation, have seized on this for a temporary support, and who daily injure the health and tamper with the lives of our citizens? We put it in another point of view, to the *radical* reasoners amongst us, who are so anxious that all should pursue any and every business they may select, without restraint. You have by your laws directed a certain course and period of study as preliminary to the permission to practice physic and surgery. This you demand from all, whether young or old, rich or poor. Expense, both as to time and money, is required for its competition, and yet you will exempt none from its operation—except a vile illiterate quack, whom you authorize to administer the medicaments that nature has given you for better purposes, and with as little knowledge of the effects they are to produce, as the patients have, who are trepanned into their use. Surely this is not equality of rights. Is there then a more important or more desirable object to be presented to our legislature than the proposed repeal of this *permission;* a repeal merely, we repeat, for we do not urge a crusade against these pretenders. All that is desired, is that the law shall not patronise them in their doings, or throw around them the broad shield of its protection.

The 2d, 4th, and 5th sections are intended to obviate certain difficulties, and to correct some abuses that have occurred in the examination of students for their licenses. It has happened that a student rejected in one county, has immediately gone into another, and presenting his certificates of a regular course of study, has demanded an examination, and obtained a license to practise. This is prevented in the proposed law. Again, students have studied in one county, and have gone into another to be examined. The sections in question ordain that a student shall be examined before the Medical Society of the county in which he has studied, or before the State Medical Society, that if rejected by the County Medical Society, he may appeal to the State Society; that after a rejection by a County Medical Society, a second examination of the same individual cannot be held until after six months have expired; and finally, that if a student be rejected by the state censors, he shall not at any time thereafter be examined by a County Medical Society. All licences obtained contrary to these provisos, are declared null and void; and it is further enacted, that due notice of an examination shall be given to *all* the censors, and not to a bare quorum merely. We believe that experience fully sanctions the necessity and propriety of these enactments, and that their certain tendency will be to elevate the standard of professional acquirements.

The third section relates to physicians coming from other states or countries. We will quote the existing law concerning them, and then the proposed alteration. The 22d section of the act of 1813 requires that the individual shall be duly authorized to practise by the laws of the state or country, from whence he came, "having a diploma from a regular medical Society." The 4th section of the act of 1818 requires that he exhibit to the Medical Society of the county where he resides, sufficient proof that he has studied medicine four years, or in lieu of one of these years, has attended a full course of lectures. The amended law proposes, "that he exhibit satisfactory testimony of having attended a course of medical instruction as full and complete as that which is re-

quired in either of the medical colleges in the state;" or, in other words, that he must have attended *two* full courses of medical lectures.

The 6th, 7th, 8th, and 9th sections form part of a code of Medical Police, which it is now attempted for the first time to introduce into our statute book, but which, we believe, the wishes of the profession have long called for. Its leading provisions are as follows. On complaint in writing, before any County Medical Society, charging a practitioner "with having been guilty of infamous crimes, or habitual drunkenness, or of gross ignorance and incompetence," said society, after due notice to the accused, are authorized to investigate the subject—to compel the attendance of witnesses, and by the votes of two-thirds of its members, to suspend the delinquents from the practice of physic and surgery. An appeal may be taken up to the State Medical Society, and this latter body as a court of review are authorized either to annul or ratify the sentence. Provision is also made for a removal of the suspension after a proper period.

We shall not insult the understandings of our readers, by endeavouring to adduce reasons for the necessity of this measure, nor will we even allude to cases of daily occurrence, which would fully warrant the exercise of strong discipline. We assert without fear of contradiction, that the proposed amendments are in reality of greater importance to the community in general, than to the profession. It should also be recollected, that the other learned professions possess within themselves a power of removing or suspending their unworthy members, and we are yet to learn why in our own the same power may not with safety be vested. The medical societies under the present system possess no effective power to correct the abuses noticed above. They may expel the individual, and instead of regretting it, he will rejoice at being freed from the necessity of attending the meetings. He has still the power of practising, and while he possesses this, it is altogether unimportant to him whether any of his brethren will consult with him or not. We are well convinced that any enact-

ments which like those contemplated above, can be held *in terrorem* over offenders, must tend to purify the profession.

The remaining sections need only a very brief notice. Section 10th permits a society to alter the time of its annual meeting after due notice has been given. The 11th section formally repeals such parts of the existing laws as are inconsistent with the present, whilst the 12th authorizes the substitution of the affidavit of a practitioner of medicine, as testimony of the term of study of a student.

The 13th and last section provides for the election of three state censors in each of the senatorial districts of this State; thus increasing the number from twelve to twenty-four. The *immediate* result of this will be to place a board within the convenient reach of any student, who is desirous of applying for a license. The *future* consequence, we trust, will be to abolish the licensing powers of the county societies. We know of no measure that appears better calculated to improve the style and character of examinations, than thus to form eight boards of censors. They should be enlarged, if found necesary, so as to contain ten, twelve, or more members; should meet semi-annually or quarterly in some central place, and should transact their business in a public manner. We venture to predict, that if this course was adopted, unqualified individuals would not be so ready to apply, as they are at present. Let it however be understood, that this is only a proposition of our own. The amendment merely contemplates the formation of censorial boards, in the different senatorial districts, and thus gives to students in *every* part of the state, the same privilege that those residing in the southern and eastern divisions have long enjoyed.

On a review of the objects comprised in the proposed law, we are fully justified, we think, in asserting that they are patriotic; designed rather to subserve the interests of the community, than to support or foster any particular part or portion of the profession. They will bear examination and investigation, and time while it adds weight to the necessity

which calls for their adoption, will give strength to the arguments by which they have been enforced.

In these respects, it differs from *another act for the promotion of medical science*, whose unblest reputation extends from one end of the state to the other, and whose success is a subject of bitter taunt to every physician who applies for public purposes to the legislature. The purchase of the botanic garden by the State, and its *subsequent utility to the cause of medical science*, are known and appreciated by every citizen of information; while the transaction itself has done more than any other public act in our history, to impede the progress of applications on the part of the profession.

Here we might rest our notice, but we feel we should complete our object imperfectly did we did not briefly animadvert on a subject intimately connected with the foregoing. We refer to the legal qualifications for the degree of *Doctor of Medicine*. It is in vain to endeavour to improve the standard of the lesser honour, (the license, we mean) if that of the higher is frittered away and cheapened.

The laws concerning this degree are brief, and as we think, explicit. By the act "relative to the University," the Regents are invested with the right of conferring the degree of Doctor of Medicine on any person or persons whom they may deem worthy thereof, and such degree shall authorize the person on whom it is conferred, to practise physic and surgery. Under this provision, the Medical Colleges annually recommend to the Regents, such persons as they deem qualified. By the medical law of 1819, it is ordained that "no College of Physicians and Surgeons in this State shall confer a diploma for the degree of Doctor of medicine upon any student, until such student shall have fully complied with the requisitions of the first section of the act to amend the act to incorporate Medical Societies, for the purpose of regulating the practice of physic and surgery, passed April 20th, 1818, and shall also in addition thereto, have attended one complete course of lectures, delivered by each of the professors of such college." Now the requisitions of the act of 1818 are four

years study, or in lieu of one year, attendance on a full course of lectures, and the attainment of the age of 21 years.

These are the legal enactments on the point in question, and the first, and indeed the only subject that is capable of doubt, is the commencing clause. In *point of fact*, no medical college can confer the degree of doctor of medicine. This power is solely with the Regents. What then is the meaning of it? We shall state what we know personally. The bill was introduced and carried through the legislature by a medical gentleman, who with his friends, intended it as a check on the profuse and indiscriminate recommendation for degrees by the Medical College of New-York. It was intended to raise the qualifications for the degree. He was probably not aware that the legal power of granting the degree was in the Regents, or if he did know it, believing that the latter would not abuse their powers, but that the former might, he drew the bill in its present form. It is at all events imperative on the colleges, and so it has always been understood. We say it without fear of contradiction, that there is no unbiassed man in the profession, who has not so construed it.

It was urged at a late meeting of the Regents, that the clause in question had no reference to them; that their powers were still unlimited, and that it was intended to prevent our literary colleges, and in particular, Columbia College, from granting the degree. Now as to the first, we remark that the powers of the Regents are still unlimited, so far that they can grant the degree to whom they please, but then the degree is honorary. If it be so understood, all objection ceases. If they choose to make a young man of eighteen years of age, a young man who has studied two years, or an individual who has no certificates of his time of study or his age, an M. D., be it so. No one can doubt its legality, however much its propriety may be questioned. But these cases are not presented. The persons brought forward, all preferred their claims as students of the medical college, and the diplomas issued, passed down and were presented by the officers of that college. Then we humbly contend they should be judged of according to the laws which govern the college.

The second objection is, however, the most extraordinary one. In 1819, the law on this subject was passed. Five years previous, (in 1814) Columbia College had voluntarily and formally abolished the medical department, and her medical professors had united themselves with the New-York College of Physicians and Surgeons. Was it then to be expected that she would ever attempt to grant the medical degree? In fact she never did. Again Union and Hamilton Colleges, we assert, have not the power in their charters of granting this honour; but even if they had the perfect and complete power, what purpose could be effected by it, or why should this law have been passed to check them? Their degrees would be merely *honorary*. The degrees of the Regents, on the recommendation of the colleges, are equivalent to a license; they give a right to practice—*to raise money from the liege subjects of the State*. We do not censure the Regents for being unacquainted with these facts, or for acting under the impression that the construction of the clause is such as is stated above. Many of them have been elected into the Regency since the law was passed, while few have paid much attention to the medical code of our State. There was one individual, however, (a Professor of the New-York College) from whom the suggestion may possibly have come, who was present as a spectator at the discussion, who professes himself intimately acquainted with the laws concerning the medical profession, and who *knew* that the act in question was never passed to combat such a windmill as the power of Columbia College to grant effective medical degrees, and yet to accomplish a temporary purpose, he was contented to be *at least* silent; to permit the whole system of medical law to be thrown into confusion, and practically to see the qualifications for a license made more ample, more important, more indicative of a proper medical education, than that of a doctor of medicine. What has he gained? what will he gain by this step? what will his college gain by it? Its honours already withering, need reviving. Its

reputation already tottering, needs support. And it is not in the miserable pageant of some ten or twelve additional graduates, that the return of these is to be looked for.

While, however, a diversity of opinion on this subject exists among the Regents, we can only respectfully suggest one mode of securing proper legal qualifications in the candidates for the degree. Let proper application be made at the next session of the legislature, for a law directing the Regents in no case to confer the rank of doctor of medicine on a student of the medical colleges, until he shall have exhibited satisfactory proofs of having studied medicine three years, of having attended two full courses of lectures, and of being twenty-one years of age. Reserving at the same time, the powers now resident in the Regents, of conferring honorary degrees.

ART. II. *A Physiological Essay on Digestion*, BY NATHAN R. SMITH, M. D. *Professor of Anatomy and Physiology in the University of Vermont.* New-York. E. Bliss & E. White. 1825. 8vo. pp. 93.

THE object of this Essay is to give to the medical world a new theory of Digestion; a concise analytical view of which we shall endeavour to present to our readers. Before commencing it, however, it seems necessary to give a loose sketch of the present received opinions upon the subject, in order to show our author's objections to them.

The process of digestion as laid down by the best physiological writers of the present day, is simply this. The food while undergoing the operation of mastication, is thoroughly mixed with the salivary secretion. Upon reaching the stomach, it is exposed to the action of the gastric fluid, which by a peculiar solvent power, aided by the natural motions of the organ, converts the substances exposed to its action into a homogeneous mass, called chyme. Physiologists are not agreed as to the precise nature of this change, some considering it as purely chemical, the stomach aiding only so far as it furnishes

a certain degree of heat, moisture, and motion; amongst these are Wilson Philip, and Magendie; whilst another class conceive that the vital powers of the organ are indispensably requisite to the production of this change. The chyme then passes into the duodenum, where it meets with the secretions of the pancreas and liver, which are supposed either to precipitate an opaque, white liquid, called chyle from the chyme, or to so modify it as to enable the lacteals to select and absorb this same milky fluid, as it slowly passes through the long track of intestines.

In commenting upon this theory, Dr. Smith maintains, that, in relation to the solvent properties of the gastric juice out of the stomach, the experiments of Cheselden, Reaumur, and Spallanzani, are loose and inconclusive, varying not only in the results obtained by the different individuals, but by the same individual in different experiments. The more recent experiments of Montegre made with all the care and accuracy of modern chemistry by no means correspond with those just referred to; indeed, of such a nature is the evidence drawn from them, as to convince that able experimental physiologist Magendie, that nothing like digestion has ever been carried on out of the stomach.

The erosion of the coats of the stomach after death, first noticed by Hunter, has always been considered as a strong proof of the powerfully solvent properties of the gastric juice. Dr. S. endeavours to do away the force of this evidence by a different explanation.

"With regard to the first phenomena, it appears to me, that the advocates of the theory of solution are not aware of the dilemma to which they are reduced, in case it be admitted as an effect of the gastric juice. Magendie, in accounting for the inertness of the gastric juice out of the stomach, attributes it to the absence of certain circumstances, which cannot be accurately imitated. The principal of these are uniform heat and motion. They, it is obvious, are dependent upon vitality, and must cease with it. If, therefore, it be asserted by any, that this fluid acts thus upon the dead stomach, with an energy equal to that of the most powerful acids, it is certainly incumbent on them to exhibit its effects out of that organ, since there can be no reason why they should not be unequivocally demonstrable.

"These *post mortem* changes are, in a general way, accounted for, on the supposition that the organic functions, particularly those of the capillaries and absorbents, continue to be performed after the animal functions have ceased.

"Who, therefore, will undertake to say, that the above-mentioned erosions of the stomach are effected by a fluid, secreted by that organ, and possessing remarkable chemical properties, because it is impossible that they can be accomplished in any other way? We know, very well, the extreme vascularity of the stomach, and that its capillary vessels, and particularly its absorbents, act with unparalleled energy. We know also, that different portions of the stomach derive their vitality from different portions of the nervous system. Is it not possible, therefore, to conceive that one part of the stomach, having lost its vitality, may be acted upon by another which retains it? It is by no means incumbent upon me to make out, even the probability of this supposition, the bare possibility of it is obviously sufficient for my purpose.

"Another objection to the common explanation of this phenomenon is, that in all those instances in which it has been observed, the food, taken into the organ a short time previous to death, has been found untouched, however extensive the erosion of the stomach may have been. It is certainly very singular, that this fluid should produce no effect on the aliment, which, to prepare it for its action, has been comminuted by the teeth, mixed with the saliva, macerated by the fluids of the stomach, and finally imbued with the gastric juice itself; and that it should turn with energy upon the stomach, which has been influenced by none of those circumstances, and which is moreover protected by an epithelium, or cuticle, and its own mucous secretions." p. 44, 45.

The experiment of introducing into the stomach hollow metallic balls, perforated with holes and filled with aliment, first performed for the purpose of disproving the idea of the mechanical action of the walls of the stomach, has always been regarded as conclusively demonstrating the existence of a fluid, which, penetrating the cavities of these balls, effected a change upon their contents precisely similar to digestion under ordinary circumstances.

"I hope to make it appear not only possible, but even probable, that the villi of the stomach act immediately on the aliment, and effect the changes that have been attributed to the gastric juice. It is enough for my present purpose that such a thing is obviously possible, and being so, the phenomenon in question is no longer proof of the solvent powers of the gastric juice; for the villi of the stomach, being probably capable of elongation,

and attached to a very moveable membrane, would be capable of seeking the aliment contained in the stomach and of coming in contact with that which is enclosed in the balls; and it is to be observed, that it is only that portion, which is in the neighbourhood of the holes, that is found changed.

"It is proved by Wilson Philip and others, that it is only the surface of the alimentary mass in contact with the walls of the stomach, that is changed by the gastric juice: therefore, only that part of the aliment in the balls, which is reached by the surface of the stomach, can be acted upon, according to either supposition. Hence, the fact is as much in favour of the one position as the other, and proves nothing." p. 46.

After speaking of the well known fact, that digestion only takes place on the surface of the mass of aliment, or on that part only, in contact with the coats of the stomach, Dr. S. goes on to remark.

"The promptitude with which digestion is interrupted, by the division of the eighth pair of nerves, is a sufficient evidence that there is something more than a mere chemical process going on in the stomach, for according to the commonly received hypothesis, the gastric juice, already secreted, should continue to operate upon the aliment." p. 50.

These are the points upon which Dr. Smith chiefly relies for the overthrow of the long established doctrine of digestion by the gastric juice. There are, however, certain minor ones, which he considers as bearing strongly upon the question. If the commonly received opinions are true, he argues, this must be considered the only instance in the whole animal economy, in which an important change is at once wrought upon a large volume of matter. All the changes effected, in the blood, on the aliment mixed with it, are carried on in the capillary vessels of the lungs and the nutrient ones of each tissue to which it is appropriated. Is it not surprising, therefore, he asks, that so great a change can be effected upon a large mass in the stomach, when, to accomplish changes much less important, it is necessary that the matter acted upon should be made to pass through vessels indefinitely multiplied?

The variable appearance and properties of the chyme are then noticed; and the fact that chyle, similar to that found in the lacteals and thoracic duct, is never found in the intestines is

brought forward as an additional argument. Reasons, however, which our author thinks much more conclusive, are drawn from the anatomical structure of the parts. These, we cannot give more clearly than by quoting his own words.

"The villi or papillæ of the stomach are, in their structure, essentially the same as those of the small intestines. No material difference in their organization can be pointed out, and yet we are told, that their offices are diametrically opposite, that of the villi of the stomach being to exhale the gastric juice, while those of the intestines absorb the chyle.

"Bichat noticed this incongruity, and says, 'It is difficult to conceive how an organ, every where nearly similar, can perform, in different parts, functions so different. I say nearly similar, for we shall see that these papillæ exhibit differences of size, length, &c. without having any of texture or structure.

"That the thoracic duct is the only medium of communication between the digestive organs and the mass of the blood, is the necessary belief of those who favour the opinion in question. It is conjectured by some, that a small quantity of nutriment is taken up by the lymphatics, but these terminate in the thoracic duct.

"This vessel is of extremely small size, although the common trunk of the lacteals and lymphatics. Its coats are so exceedingly thin and delicate, that when collapsed it is scarcely discernible. Its length is very great, as it extends from its origin in the abdomen, quite through the thorax to the left subclavian vein.

"If the functions of this little vessel are what they are supposed to be, it certainly performs an office of vastly more importance than that of any duct in the system. We should expect therefore, from observing the provisions of nature in less important structures, to find this organ guarded with peculiar care, and with appendages capable of performing a vicarious office.

"Of all those organs, which are properly called ducts, I believe it is the longest, and of course, in this respect, the most exposed to obstruction. Its parietes too, are the most delicate and unresisting. It passes in the neighbourhood of parts, which, in certain diseases, would be exceedingly liable to press upon and obliterate it. It has no fellow, nor is there any organ which can assume its functions.

"The experiment of tying this duct in the living animal, I consider to be neither conclusive for nor against the opinion, which I oppose. In many instances where it has been tied, the animal has experienced no inconvenience. In others it has proved fatal." p. 55, 56, 57, 58.

The immediate sensation of renewed strength and vigour, which is felt by one who has fasted for a length of time upon

taking food, before the process of digestion has had time to commence, and which is usually attributed to sympathy, is accounted for by Dr. S. in a different manner, and in one which strongly favours his theory, as we shall see when we have completed its examination.

Having thus, to his own satisfaction, completely demolished the old theory of digestion, our author, as in duty bound, sets himself diligently to work to build up a new one on its ruins, which he styles, "*Digestion by the veins of the stomach and intestines, and by the liver.*"

"My proposition is, that the first step in the process of digestion is effected by capillary veins, originating in the villi of the stomach with absorbing extremities, and terminating in the great branches of the vena portæ. The arguments in favour of it are drawn from the results of certain experiments, from the nature of the change effected on the aliment, from the analogy of plants with animals, and from the anatomy and pathology of the digestive organs." p. 64

In detailing this theory, we shall endeavour, so far as is practicable, to make use of our author's own words, hoping that this mode will preclude the possibility of unintentional misstatement or mis-colouring.

The doctrine of absorption by the capillary veins is by no means new. It was long since started, though soon allowed to fall into neglect, where it has remained, until recently brought forward, backed by such evidence as no longer to leave a doubt of its truth. Magendie and the elèves of his school have, by their ingenious and ably performed experiments, confirmed by those of our countrymen Messrs. Lawrance and Coates, fairly put this question at rest. What the peculiar nature of the substances they take up is, we are not told, though it is the opinion of several distinguished physiologists, that they are wholly occupied in the removal of the solids.

It necessarily follows from what we have already seen of Dr. Smith's theory, that having found a set of vessels to do the work generally supposed to be performed by the lymphatics

and lacteals, these last vessels must be supplied with new functions; accordingly he says,

"I would not be understood to deny the function which the lymphatic and lacteal absorbents are supposed to perform. It would seem, however, that the lymphatics performed some other office. Their contents, so far from appearing to be excrementitious matters, consist of a fluid which is uniform in its sensible and chemical properties, and which appears to be highly animalized, and resembling the most important constituent principle of the blood.

"If the lymphatics exert no influence on their contents, but exist merely for the purpose of taking up that which has become useless, and conveying it into the mass of the blood, why, since nature accomplishes her ends by the simplest means, do not the absorbent branches terminate in the nearest veins, instead of traversing so great a distance to reach the left subclavian?

"From the length of these vessels, which is greatly increased by the convolutions which probably take place in the lymphatic glands, from the nature of their contents and other circumstances, we are led to inquire whether they are not concerned in the important process of animalization, receiving certain parts of the blood from the capillary arteries, which they exalt to a higher degree of organic life." p. 66.

In pursuing the subject, after alluding to the fact to which we have just referred to as demonstrated, viz. the absorption of fluids, as water, alcohol, prussiate of potash, &c. by the veins of the stomach; he continues,

"Again, if the veins of the stomach absorb any fluid substances except mere water, we do no violence to reason to say that they will, in some way or other, take up such substances as are insoluble, so far as we know, by any thing contained in the stomach. Most physiologists believe, that certain medicinal substances which are insoluble, are, nevertheless, taken into the circulation by the absorbents. The fact appears to me to be supported by abundant proof. We know, also, very well, that the bones and other solid parts of the system, are sometimes taken up by either the absorbents or veins, with surprising rapidity. In some instances, the most intractable substances, when lodged in the flesh, have been absorbed and removed.

"That our food, solid and fluid, should be taken up by the veins of the stomach with sufficient rapidity to be subservient to digestion, is certainly not absurd. Vascular and nervous as the stomach is, we are to presume that its vital energies, in this respect, are far superior to those of any other tissues in the system. The surface too, which it presents to the food, when we consider its folds and its papillæ, must be very great.

"The villi of the intestines are known to perform absorption with great energy, and that of a substance which does not appear to be altogether fluid. The villi of the stomach are certainly more numerous than those of the intestines and, a priori, we might fairly presume, from their anatomical structure, that they performed the same function with greater energy." p. 69.

The sensible properties of the chyme are brought forward in confirmation of our author's hypothesis; we must confess, however, that we cannot see how it favours the new theory more than the old. The effects of the division of the eighth pair of nerves, we look upon as having a much stronger bearing on the question.

"The results of the experiments of W. Philip harmonize much more perfectly with the opinion which we offer, than with the theory of solution. In mentioning the phenomena which result from the division of the eighth pair of nerves, we could not but admire how the process of digestion should be immediately suspended, even although the food in the stomach be imbued with the gastric liquor; particularly, as it is stated by the advocates of the latter theory, that the gastric fluid does, after death, corrode the walls of the stomach. If the most important influence exerted on the food is by the absorbing powers of the villi, and if the villi receive their power to act, as they undoubtedly do, from the eighth pair of nerves, the difficulty is at once solved." p.71.

We are next presented with a comparison between the digestion of animals and plants. Analogies drawn from one kingdom of nature, and applied to another, can, at best, be considered only as collateral evidence, and must at all times be received with many grains of allowance. The evidence drawn from the inferior animals is much less objectionable, though even this should be admitted with great caution.

In the succeeding paragraph, entitled "assimilation effected by the capillary vessels," we are presented with our author's notions upon this point.

"That it is accomplished in the capillary and other vessels, through which the aliment is made to pass before it is added to the circulating mass of the blood.

"It is obvious, that whatever is absorbed by the veins of the stomach will be first conveyed through the tissue of vessels indefinitely minute, which may be said to compose the villi of the organ; next through the branches which ramify in the cellular coat, through the long tortuous vessels of sen-

sible magnitude meandering upon the surface of the stomach and between the lamina of the peritoneum.

"This, however, is not the most interesting part of its course. On reaching the trunk of the venæ portarum, along which it is slowly propelled, probably by the action of that vessel, it is conveyed to the great fissure of the liver, to be diffused through that large and important viscus, having first been mingled with the returning blood of the spleen, the pancreas, the omentum, &c. It is then again subjected to the action of a congeries of capillaries, constituting the substance of the liver.

"Here, then, is an ample opportunity for all those changes to be wrought, which may be deemed necessary for the conversion of aliment into blood. This supposition too, accords well with what we observe in the performance of other functions, by which changes are wrought in the properties of circulating fluids, viz. that they are accomplished not upon large volumes and in large reservoirs, but upon attenuated streams and in minute vessels." p. 78.

With regard to the circulation of the venæ portarum, the next point upon which an argument is founded, we must confess, that the opinions of anatomists are in a sadly loose and unsettled state, and our author's suggestions, though not wholly original, we think are entitled to great credit for their ingenuity.

Several writers on anatomy and physiology, as well as medicine, have often expressed their doubts whether the liver did not perform some other function than the secretion of the bile. Its great size and importance in the fœtal state, being apparently scarcely at this period second to the heart, its subsequent growth, and the great mass of blood which circulates in it, and its influence upon the whole system when diseased, all seem to show that this organ was intended for a more important purpose than the mere secretion of the "natural stimulant of the intestines."

A careful consideration of the phenomena of the fœtal circulation almost converts these doubts into positive conviction.

"It is well known that previous to birth, the liver predominates over all the other viscera. It is undoubtedly thus early developed for important purposes, performing, at that time, some indispensable office in the fœtal system. It is conjectured by some, that at that time it exerts an influence

on the blood which is subsequently assumed by the lungs. The blood which is received from the maternal system is conveyed to the liver by the umbilical vein. It there enters the portal sinus, a part of it being taken up by the ductus venosus, while a large proportion is conveyed by the ramifications of the venæ portarum through the glandular structure of this organ. It is not in vain that the fœtal blood is thus circulated through the liver, it is undoubtedly for the purpose of its being wrought upon by the capillaries of that gland, and it is for this purpose that the liver is thus early perfected.

"In the fœtal state the system of the vena portæ is organised at the same time with the digestive organs, but, like the vascular system of the lungs, it is in a great degree dormant, the quantity of blood which it conveys being merely sufficient for their nutrition. The moment, however, that digestion begins to take place after birth, these organs become centres of fluxion, and the venæ portarum becomes charged with blood possessing peculiar properties which, in some way or other, it receives in the stomach, intestines, &c.

"At birth the circulation by the umbilical vein immediately ceases, and its place, as soon as digestion commences, is supplied by that of the blood of the venæ portarum. Must we not infer then, that this last is circulated through the liver for the same purposes as the former? for it is conveyed in the same vessels, and we cannot suppose that they are at once endued with a new action, entirely different from that which they had before performed, and which is merely for the purpose of furnishing bile, a fluid which is not needed in the fœtal state, as no digestion then takes place." p.81.

We have thus endeavoured to give a concise, and we hope, intelligible account of Dr. Smith's new theory of digestion, and think it indicates no inconsiderable degree of talent and ingenuity. It is fairly before the medical public; they are its legitimate judges; from their decision there is no appeal, and by their verdict it must stand or fall.

ART. III. *Tables of* CHEMICAL EQUIVALENTS, *incompatible substances, and poisons, and antidotes, with an explanatory introduction.* Collected and arranged by ROBERT BEST, A. M., Lecturer on Pharmaceutical Chemistry in Transylvania University. pp. 74. Lexington, (Kentucky,) 1825.

WE have examined this little treatise with great pleasure. It is illustrative of the industry of the teachers in the flourish-

ng medical school of Lexington, and at the same time, furnishes a compend of instructive matter, that must prove useful and convenient to both students and practitioners. Its contents, as its title states, consist of three parts. 1. Tables of chemical equivalents. These are accompanied with explanatory remarks and illustrations, which we apprehend will greatly tend to facilitate a knowledge of them, beyond what is usually to be found in systematic works on chemistry. Mr. Best has not followed any author implicitly, but has selected with discrimination from the best authorities. It may be added that he selects hydrogen as the standard of unity. 2. Incompatible substances. This table is principally selected from the Pharmacologia of Dr. Paris. 3. Synoptic tables of mineral poisons, with their appropriate tests and antidotes; translated by professor Daniel Drake, from the French of De Salle. These tables are generally similar to those published by Stowe in England, perhaps even more minute and extensive. Professor Drake has added a valuable note on the vegetable poisons, arranging them, first, according to the natural orders, next as to their effect on the system, whether acrid, narcotico-acrid, or narcotic. The symptoms and treatment are also briefly discussed. In addition to the deleterious vegetables usually enumerated in works on medical jurisprudence, we observe that Dr. Drake has added the following amongst others: *Æsculus pavia.* —— *flava.* —— *Ohioensis.* *Cimicifuga racemosa.* *Actæa Americana.* *Ferula virosa.*

In his remarks on the symptoms, he observes that, "cattle poisoned by eating the nuts of the *Æsculus Ohioensis*, (which destroy them by inducing gastritis,) are affected with extreme vertigo, accompanied with muscular debility and tremors." We should have been happy to have met with more extended remarks on the effects of the poisonous plants that are peculiar to the western country. We trust that, at some future period, Dr. D. will find leisure to lay them before the public.

BIOGRAPHY.

A Biographical Memoir of CORNELIUS E. DE PUY, M. D. *member of the New-York Historical Society, &c. read before the Physico-Medical Society of New-York, at its anniversary meeting on the 8th of August*, 1822. By JOSEPH M. SMITH, M. D.

GENTLEMEN,

IN accordance with that law of our nature, which prompts us to preserve the memory of our departed friends, and under the sanction of a resolution of this society, we propose at this time to commemorate the life and character of our late associate, Dr. Cornelius E. De Puy. It is not in every instance, however amiable in their private walks, and beloved in their social relations, that our deceased friends are entitled to a public tribute of respect. In all ordinary cases, it is enough to mourn for them in private, and to recount their virtues in the circle to which they were endeared. But there are occasions in which something more is proper. The death of individuals distinguished for active and unbounded philanthropy, extraordinary attainments in literature or the arts, important discoveries in science, or great civil or military services to their country, is calculated to produce a deep and lasting impression on the public mind; and accordingly, to all such are awarded, by common consent, the honours of public orations and finished biographies; their names are recorded on the page of history, and statues and temples are erected to perpetuate their memory. But these honours are

merited by comparatively few ; and no one can reasonably expect to deserve them, who does not, either by the force of his genius, or with moderate powers, by unceasing sedulity, rise greatly superior to his fellows in the benefits he confers on his country or the world. There is still another class of individuals, who though their lives afford no matter for the historian or biographer, are distinguished by so many noble and generous traits of character, and so many evidences of intellectual superiority, as well as indications of future pre-eminence and usefulness, that to them, on their premature removal from life, is properly adjudged, at least the honour of public eulogy. In this class, the subject of the present notice held a respectable rank.

Were the feelings, which friendship inspires, likely to endanger the correctness of the estimate we make of another's character, I should hesitate before attempting to proceed in the duty assigned me ; but this, it is believed, can rarely or never be the case when the chief merit of an individual is derived from circumstances which have as closely connected him with the public, as with his nearest friends. To the public, legitimately belong the capacities and talents of the head, and to friends, the affections and sympathies of the heart; hence, those qualities which we find in another as common property, may be examined with equal impartiality by a friend, and doubtless will be with more precision, than by one who has never felt any personal interest in his prosperity. Yet, to avoid the errors arising from excited feelings, let us, instead of exclusive panegyric, review the considerations that claim for our late associate, the honour which the present exercise is intended to bestow on his memory.

The bereavement we have suffered, is rendered more than usually lamentable by the circumstances under which it happened. When those around us pass away through the outlets of disease or old age, we contemplate their departure under views with which we are familiar ; and consequently, I seldom experience any additional pain from the manner of their death ; but when they fall by sudden and unexpected

disaster, then truly do we feel the force of the truth, "in the midst of life we are in death;" then, indeed, is the heart made to feel the poignancy of grief.

Scarce had our city recovered from the gloom occasioned by the loss of the packet Albion on the shore of Ireland, than we were shocked by the tidings of a similar calamity which happened to a party belonging to the Franklin 74, in attempting to land on the coast of Chili. In the former instance, we not only wept at the recital of the tale, which numbered so many lives suddenly withdrawn from the sum of human existence, but we opened our bosoms to a free communion with those who had suffered by the loss of friends and relatives: we felt that our country had been deprived of citizens eminently worthy in their several professions and callings; and we turned with more than common sensibility to the college of a sister State, and, in the spirit of condolence, participated in her grief for the loss of a young but distinguished professor. In the latter instance, our feelings have been somewhat of a different sort. The Franklin left the United States, bearing with her to a distant region, those for whose welfare were breathed the ardent prayers of innumerable friends, and the best wishes of the American people. Besides the solicitude felt for the personal safety of those who had embarked in her, there was a more than ordinary interest excited by the expectation, that her cruize in the Pacific Ocean would afford many opportunities of extending the knowledge of the power and character of our country, and of enlarging the boundaries of science.

In this latter service Dr. De Puy was exclusively engaged. Under the influence of such feelings and such expectations with what appalling emotions did we receive the intelligence, which announced the fatal adventure on the 19th of March; an adventure long to be remembered, as it deprived the expedition of its principal labourers in natural science, and this society of one of its most promising and valuable members. But he did not perish alone: in the number lost on that occasion were several officers, whose gallantry and accomplish-

ments had placed them high in the estimation and confidence of their country. But while

> "For them, is sorrow's purest sigh,
> O'er ocean's heaving bosom sent,"

let it here be our duty and melancholy pleasure, to speak of him who was endeared to us by the strongest ties of social fellowship, and whose death we have reason deeply to lament.

A long period of friendly intercourse, and, I may add, of intimacy with Dr. De Puy, enables me to assert that he possessed many rare and excellent qualities; and that he was distinguished for his rapid and uninterrupted advancement in literature and science; we say rapid and uninterrupted, for his mind was of so active a turn, that idleness was a state he could not endure; and as his temperament was of that moral cast which made him shun the dissolute and vulgar expedients of killing time, and especially, as he had an early fondness for, and subsequently a strong ambition to excel in science and classical learning, his attention was constantly devoted to intellectual improvement.

He was born of Dutch parentage, in Ulster County, New-York, about the year 1791. His education, prior to the commencement of his medical studies, appears to have been limited to the branches usually taught at a grammar school. But this, to one so ardent in the pursuit of knowledge, was a foundation sufficiently broad for him to proceed in the erection of a superstructure, which, had he lived to complete, we believe, would have been an ornament to his country, and to him a monument of fame. Commencing his course of medical reading in the country, under the direction of an eminent practical physician, he soon acquired that knowledge which fitted him to enter upon the more elaborate studies connected with the proper attendance upon the lectures delivered in the University of this State. On removing to the city, he became deeply impressed with the advantages to be derived from the prelections of public teachers; the ready access to professional and miscellaneous libraries, and from

visiting the institutions for the healing of the sick. These considerations determined him to complete his pupilage in the city, and eventually to make it his permanent residence. He was graduated doctor of medicine in the University, in the year 1814. Those, who knew him at that period will testify, that few candidates for the honours of the college were distinguished for a wider range of general information, or a more particular and systematic knowledge of the several branches of medical science. Prior to his graduation, he held for a considerable time the place of resident physician in the New-York Alms-House, an establishment superior in many respects to a regular hospital for improvement in clinical medicine. While in this institution, he discovered a ready talent for discerning the nature of diseases, and a correct judgment in prescription.

His settlement in this city, in the practice of his profession, may be regarded as one of the circumstances which concurred to favour the institution of the Physico-Medical Society. The views, entertained by the projector of this society, were early embraced by Dr. De Puy; and his zeal and talents were immediately engaged in digesting its plan, and bringing its objects into a definite form. On the 8th of August, 1815, he assisted at its organization; and subsequently proved himself one of its most able and indefatigable supporters. His intelligence and literary qualifications, secured to him, from the commencement of the society to the period he left New-York, his annual election as chairman of the committee of publication, an office, the duties of which he discharged with a fidelity and judgment that deserved and obtained the highest approbation. His professional attainments were fully tested in the publication of the first volume of our transactions, which appeared in 1817, two years after the institution of the society. The contributions, made by himself to that volume, have been justly esteemed among its most ingenious and logical essays. His first paper, entitled "An Inquiry into the botanical history, chemical properties, and medicinal qualities of the Erigeron Canadense,"

was read within a month after the society commenced its operations; a fact we deem worthy of being mentioned, inasmuch as this communication was entirely voluntary, or, in other words, was not called for at that particular time, by the obligation which the constitution provides for securing the regular reading of papers. It was offered as a testimonial of his devotedness to the interests of the society. The several topics treated of in that essay are discussed in a practical and satisfactory manner.

But the merit of Dr. De Puy, as a medical writer, is more fully discovered in his "Dissertation on the uniform action of the Absorbents." This paper was submitted to the society on the 3d of September, 1816, and may be regarded as the ablest production of his pen. It was evidently the result of much reflection; and though the phenomena adduced to establish his opinion that, "the action of the absorbents continues uniform throughout every stage of life, and in every condition of the body, whether of health or disease, unless when mechanically interrupted," are, for the most part, generally known, and considered as proving an opposite doctrine, yet his ingenuity made it appear, that all of them could be explained on the principle of an *uniformity* of absorbent action. And further, he contended, and with great plausibility of reasoning and variety of illustration, that the phenomena of health and disease, as well as the physiological changes, which occur in the different periods of life, could not be reduced to a consistent theory without admitting the principle in question. He considered the absorbents as placed beyond the reach of *stimulus* or *counter-stimulus*. Their functions, he maintained, were entirely impassive, and that, though the heart might be the *primum vivens* of the system, the mouths of the absorbents were its true *ultimum moriens*. Whether this doctrine will be found true, to the extent it was carried by Dr. De Puy, is perhaps questionable; but, however this may be, all must acquiesce in the sentiment of his reviewer, that "the considerations, urged by the author, evince an original

and comprehensive mind, knowing, at once, how to make observations, and to reason upon them."

A third paper was read by Dr. De Puy on the 16th October, 1817, entitled, "Remarks on the efficacy of friction in apoplexy and palsy, proved by cases." In this communication, we are presented with the most indubitable proofs of his ability as a practical physician. The cases are drawn up with great neatness and perspicuity, and his pathological reflections are highly interesting and instructive.

In thus noticing the writings of Dr. De Puy, it will be recollected, that we have spoken of those only which have appeared before the public. Several other tracts of a practical character were read by him before the society at different times, all of which were creditable to their author. It must not be supposed from the number of papers furnished by Dr. De Puy for the first volume of our transactions, that he was anxious to appear in print. That he was not influenced by a feeling of this sort, is evident from the fact, that, though always engaged with his pen, he never contributed to any of the medical or other periodical journals of our country. This circumstance, we think, exhibits, in a strong light, the motives which induced him to present his first offerings to the public through the medium of our printed transactions. Though ambitious of individual respectability as a writer, he hoped, that by his own communications to the society, he might be able to do something which would tend to render its first publication acceptable to the profession. The character of the society was with him an object of peculiar regard; and all his assiduities seem to have been directed more to the view of increasing its reputation, than of advancing his own fame.

When we review these demonstrations of his zeal in promoting the objects of this association, we are made to feel how tenderly we should cherish the recollection of his labours, and how great is the respect we owe to his memory. The first efforts of young men for the public good, or the advancement of science, are always regarded with complacency,

though they may fail to be positively useful; the first efforts of Dr. De Puy were emphatically directed to the high and noble purpose of establishing an institution for the promotion of medical science—an institution whose seventh anniversary we this day celebrate, in lamenting his death, and pronouncing his praise.

Though Dr. De Puy did not appear before the public as a writer after the publication of our transactions, it must not be supposed, that his ardour in the pursuit of knowledge had in the least degree abated. He still pressed onward in the retired paths of literature and science, making great additions to his stock of general information. He carefully preserved his acquisitions in Grecian and Roman literature, and devoted considerable attention to the French and Italian languages. To the French language he was particularly attached; he studied its genius extensively and critically, and spoke it with little or no hesitancy. He also made himself familiar with the modern classics, as well as the fashionable reading of the day: but the subject to which he more particularly gave his attention for the last two or three years, was one of confessedly great magnitude, and of immense importance. We allude to Hygeia, or the science of health. It must not be concealed that Dr. De Puy, though fully qualified to discharge the duties of a practitioner, had lost, in a measure, his confidence in some of the boasted principles of therapeutics. He often doubted the efficacy and propriety of that polypharmacy and multiplicity of remedies which are sanctioned by the generality of physicians; and moreover, was frequently disposed to question, if medicine, as we find it through the world, was not, upon the whole, rather an evil than a benefit. These doubts were probably elicited during the rigid examination which every medical subject underwent when submitted to the analysis of his strong and discriminating mind. Such suspicions, if not carried to the point of absolute infidelity, of which in his case there was no danger, were, we believe, calculated to make him a better physician. The most important effect they appear to have produced, was

to turn his mind to that department of science, which, if brought to perfection, would in a degree supersede the necessity of an extensive materia medica. The study of hygeia he thought was too much neglected. In his first surveys of this field of inquiry, he was so struck with its fertility, that he resolved to enter upon its cultivation. He accordingly read with attention all the modern works relating to the subject. The French and German he found had contributed by far the most towards the elucidation of its elementary principles. From the older writers, whom he consulted in the true spirit of philosophy, he obtained many valuable hints and interesting facts. In a word, he diligently sought out every source of information which had a bearing upon the main object of his inquiries. His mind thus stored with the knowledge of others, was prepared to bring its own energies into the work of original investigation. Those who, in private, have enjoyed his free communications on the various topics embraced in his researches, could not but derive instruction from them; and at the same time feel a conviction, that he was fully qualified to advance the science in question. Had he lived, we have every reason to believe, that at some future time he would have distinguished himself by elevating the study of hygeia to its proper rank among the branches of professional education.

The attainments of Dr. De Puy in natural history were highly respectable. Though not devoted to any branch in particular, his proficiency, generally, was such as enabled him with little preparation to prosecute with systematic accuracy, any department belonging to that interesting and extensive study. In his tour through the northern and eastern States and the Canadas in 1820, he availed himself of the opportunities which offered, to extend his knowledge of mineralogy and geology. He travelled solely for the purpose of improvement; and, we believe, was abundantly rewarded for his time and industry. The falls of Niagara, the lakes, and the diversified and stupendous scenery of the north, afforded subjects for contemplation in perfect congruity with the gene-

ral tenor of his mind. The sublime in nature powerfully arrested his attention, and he dwelt upon its objects with a solemnity peculiar to himself.

His mind at this period appears to have arrived at that point of maturity, in which, to a comprehensive range of knowledge was united a decision of character that fitted him, in a peculiar manner, for the enterprise in which he was finally engaged. It was early in the summer of the last year, that he conceived the design of visiting the countries of South America. The facilities offered him by Commodore Stewart on board of the Franklin, he thought were so favourable to the prosecution of a favourite object, that he determined to embark in her. This determination was not made in a moment, when the imagination pictured to him a new world of gratifications, but was the conclusion of much serious reflection. He fully considered the social privations, as well as the hardships and dangers, which must necessarily attend a three years' absence in journeying by sea and land in a distant and comparatively unfrequented quarter of the globe. But these discouragements he regarded but as fleeting shadows over the bright prospect which fairly opened before him. The gratification of a laudable curiosity, the extension of his own knowledge, and the probability of being able to communicate to his countrymen, or at least to his friends, something interesting and original concerning the natural history and political condition of the rising states of South America, were, in his mind, considerations that outweighed all the objections against the proposed undertaking. Provided with every thing necessary to aid him in his researches, in the possession of vigorous health, and in the best feelings of a son, a brother, a friend, and a patriot, he left his country full of hope and full of composure. Heaven seemed to smile on his purpose; and in human calculation he was destined to return: but in the council of Omnipotence it was otherwise decreed. He was, indeed, permitted to contemplate in the southern hemisphere, to use his own beautiful quotation in a letter to a friend, "a new heavens and a new earth," and to enter upon the labours

and enjoyments he anticipated. But in an hour when least disturbed by fearful apprehensions, when no danger appeared to darken his prospect, the frail bark in which he sailed on an excursion from Valparaiso to Quintera, foundered near the coast, amidst the breakers of a swelling sea. Merged in the tumultuous waves, his earthly hopes were suddenly blasted; and ah! who can tell his emotions when, in the consciousness of his situation, he found himself entwined in the arms of death, and sinking to a watery grave!—But while we pause to meditate on his tragical fate, let us not forget to joy in the reflection, that he was ever thoughtful on the uncertainties of life, and the contingences by which it might be suddenly closed; and what is more important, that he was strongly impressed with the truth of the Christian religion, and had a deep sense of its high and holy obligations.

Though Dr. De Puy had scarcely attained his thirtieth year, there was something in his character which strikingly elevated him above the generality of men. At all times modest and unobtrusive, his social qualities were known to those only who were intimately acquainted with him. His conduct was strictly governed by a nice sense of propriety; and his deportment, both in public and private, was eminently calculated to ensure respect and command attention. To talents capable of advancing the interests of science and literature, he united an ardent disposition to promote the cause of universal benevolence. Distinguished rather for strength and capaciousness of intellect than brilliancy of parts, he was more particularly qualified for undertakings which require the exercise of the understanding. When engaged in the study of a favourite subject, he gave his whole mind to its attainment, and at such times, no other object, however interesting in itself, could in the least degree divert his attention. This peculiarity may, we believe, be considered as one of the most distinguishing characteristics of his mind; for it frequently seemed to operate with an intensity that deprived him of the enjoyments that spring from a variety of mental occupations. A mind

capable of such inflexible devotion to a particular pursuit, was admirably fitted to study the character and explore the riches of a foreign country; and it was this consideration that enabled the friends of Dr. De Puy to assure themselves, that his travels would afford him an abundant increase of knowledge and fame. That his time was well and unremittingly employed after he left this city, is fully attested in his journal and voluminous correspondence. On the voyage to Valparaiso he made so much progress in the study of the Spanish language, that on his arrival there, he could discourse intelligibly with the people of Chili. And, finally, considering his brief opportunities for research, the extent of his observations, and the minuteness with which he has detailed them in writing, are truly surprising; and it is to be hoped, that his manuscripts, in judicious hands, will afford a selection of matter sufficiently interesting to communicate to the public.

Medical and Philosophical Intelligence.

FOREIGN.

On the presence of water in the lungs of drowned persons.—If there had not been something defective in the mode of examination of bodies found drowned, the presence or absence of water in the lungs after such an accident would not have remained to this day nearly as unsettled a point as it was more than a century ago. The trial of Spencer Cowper, for the murder of Sarah Stout, which took place at Hertford in 1699, affords a curious specimen of contradictory evidence on this subject: the witnesses were, for the most part, unprovided with any positive evidence drawn from the inspection of the lungs of the human subject after drowning; and we think we could point out more than one county in England in which the verdict of 'Found drowned' is so often given without the body being opened, as to cause the experience of medical witnesses to be quite as limited in the year 1825. In Professor Mayer's paper we have a long list of authorities

both affirmative and negative; and the question is of so much interest in a medico-legal point of view, that every attempt to make it the subject of research in the human subject, if not of experiment upon the lower animals, deserves attention and encouragement. Professor Mayer, having made many experiments on animals, and invariably finding a small quantity of water or bloody serum in the lungs, repeated them, with the sole difference of drowning the animals in water containing colouring matter. He asserts that the results were still the same, that he found a fluid in the air-passages, having the colour of the fluid in which the animal was drowned: in one experiment a cat was immersed in water to which hydrocyanate of potash had been added, and kept in five minutes, being taken out before it was dead, to prove that the fluid actually entered the trachea during life: a portion of the trachea was cut out, a glass tube, previously dipped in a solution of hydrochlorate of iron, was passed into it by the opening, and a deep blue precipitate was immediately formed. The lungs were full of froth, which afforded a similar test. The experiment was repeated on another cat, with precisely the same results.

From fifteen experiments, which are detailed, Professor M. deduces the conclusion that water does penetrate into the lungs of drowned persons during drowning. He refers to the experiments to prove that this takes place whether the animal remains a long or a short time in the water; whether it is taken out living or dead, or several hours after death; whether the animal is drowned in hot or cold water; whether it is kept wholly under water or allowed to come occasionally to the surface; whether pure water or coloured fluid, or some chemical re-agent, is employed; and equally in different kinds of animals. Lastly, he adds, that he has examined several bodies of drowned people, and has always found a more or less aqueous froth or an actual liquid.

The importance of this question does not entirely rest on its interest with a view to medico-legal investigations: it has some reference to our attempts to resuscitate drowned persons. For if more or less water always penetrates into the trachea and its ramifications, or even if this happens occasionally, even when the body has not been long in the water, it may be necessary to disembarass the air tubes of such an obstacle to their due inflation. In an example recently witnessed by the writer of this notice, it was the belief of all the professional assistants that their attempts to restore respiration were materially impeded by this circumstance, although permission could not be obtained to verify the fact by an examination. Professor Mayer has found by several experiments, that, by using an elastic tube and syringe, he could draw out any fluid from the trachea as far as its division, but could not command what was situated lower. This, however, will generally be sufficient, as all the fluid in the bronchiæ will be rapidly absorbed. According to some experiments formerly published by him in the *Journal Complémentaire*, fluids poured into the lungs were found two minutes afterwards mixed with the blood of the left ventricle: in four or

six minutes mixed with the serum of the pleura and pericardium; and at the end of five or eight minutes in the urine.—*Lond. Med. Repos.*

Cicatrix of the heart.—M. Bougan presented to the *Académie Royale de Médecine*, on the 16th of December, the heart of a person who died in his hospital, presenting traces of an old penetrating wound of the chest: the lung, pericardium, and heart had been wounded. These different organs were cicatrised. The patient died of a disease unconnected with the wound.—*Ibid.*

Oil of the Euphorbia Lathyris.—M. Grimaud gave account to the Royal Academy of Medicine of Paris, at their meeting on the 21st of February, of the experiments of Dr. Calderini, on the oil of the *Euphorbia Lathyris*, which is eminently purgative. M. Grimaud mentioned that he had repeated the experiments of the Italian Physician, and that he considered this oil preferable, in many respects, to that of the croton tiglium. The dose is from four to eight drops, for an adult.—*Ibid.*

Professor Autenreith's Opinion of Syphilis.—Dr. Autenreith, of Tubingen, says that Wurtemberg has furnished a proof that syphilis is a modification of lepra, and has replaced the latter malady. Syphilis penetrated into Wurtemberg a century later than into the rest of Germany. During that time leprosy continued to prevail: but, after syphilis had been introduced, that disease entirely disappeared. Professor Autenreith regards gonorrhœa as a disorder very nearly allied to lepra, as it was more frequent at the time of the introduction of the venereal disease.—*Ibid.*

Diagnosis between Irritation and Inflammation of the Mucous Membranes of the Bronchiæ.—M. Nauche thinks he has discovered a chemical test of bronchial inflammation in the secretion from the mucous surfaces. In the natural state, or where there is merely *irritation*, the mucous secretion he has found to be acid, while, on the other hand, when actual inflammation obtains, the nature of the secretion is changed, and it becomes alkaline. The two states are readily recognised by turnsol paper, which turns red with the one and blue with the other.

M. Nauche has examined the expectoration, with respect to its acid and alkaline character, in the diseases of the respiratory organs. He believes, from this inquiry, that they may be divided into matter produced by irritation—an increased secretion of the mucous follicles, which line the membrane of the air-passages, and into matter, or expectoration, which results from their inflammation. He has observed that the white, mucous, frothy expectoration, which is frequently brought up in large quantities by persons in a state of agony, has always an acid character, when the air-passages have not been the seat of previous disease. This character is likewise

found in the white, frothy expectoration which occurs during the whole continuance of pleurisy, whether acute or chronic; and at the commencement of pneumonia, when the matter expectorated is white, or even yellow. It is often lost in the course of this disease, and re-appears towards its decline. The acid expectoration is likewise found in emphysema of the lungs and scrofulous phthisis, when the tubercles are but little developed, in the state called crude. It is evident, in all these cases, that the mucous membranes which furnish the expectoration are only in a state of increased excitement, and that they are in no degree inflamed. M. Nauche has likewise found acid expectoration in certain advanced cases of phthisis. He believes that this depended upon these matters being the product of an increased secretion of the mucous membrane lining the excavations formed by the tubercles.

The expectorated matters, on the contrary, are always alkaline in inflammation of the mucous membrane of the bronchiæ, and in all the cases designated by the names of acute and chronic colds, or mucous phthisis (*phthises muqueuses.*) Although this expectoration is not regarded as purulent, it is nevertheless a kind of pus peculiar to inflammation of these membranes, and analogous to the purulent serosity which is furnished by serous membranes when in a state of inflammation.

The expectoration likewise becomes alkaline in peripneumony, when the inflammation of the pulmonary tissue communicates itself to that of the mucous membrane of the bronchiæ; and this secretion is the product of the inflammation of these two tissues.

The expectoration is likewise alkaline in phthisis pulmonalis, in the second or third stage, when the tubercles become broken down. It is usual, in such cases, to find the internal membrane of the lungs deeply altered.

It frequently happens, particularly among phthisical patients, that both these kinds of expectoration are to be found in the same vessel. That which results from an augmented excitement comes up most easily, is white, frothy, and acid; the other is brought up with difficulty, is yellow, thick, and alkaline. In this disease, when the patient has only the former kind of expectoration, his life is often in the greatest danger.—*Medico-Chirurgical Review.*

Fatal Asthma from Affection of the Glottis.—The researches of Magendie and others, teach us that, 1st, the constrictor muscles of the glottis are supplied by filaments from the superior laryngeal nerve, whilst the dilator muscles are supplied by branches from the inferior laryngeal or *recurrent* nerve; 2d, that the glottis dilates during inspiration, and is closed, almost hermetically, when we make any considerable muscular exertion, as in lifting a weight, for example. Every one must have observed that the breath is firmly retained when we make any great straining exertion with

the muscles, especially of the upper extremities. These physiological points are requested by our author to be borne in mind, as they will come in to an explanation of the following case.

Case. Michel, 22 years of age, a servant, was received into the hospital Cochin, the 26th of June, 1822, having been discharged only eight days previously from a Maison de Sante, where he had been under treatment for two months, for what was called a putrid fever. The following symptoms were now observable; viz. considerable hoarseness—violent pain in the throat—great sense of suffocation on the least muscular exertion—tongue white—appetite good—pulse frequent and small—face pale and emaciated—chest sonorous, except at the inferior part of the right side—respiration audible in all parts of the thorax—nothing remarkable in the action of the heart. The same symptoms were observable the following day. He expectorated abundantly. At ten o'clock in the evening he was obliged to start from his bed—his inspirations being profound and frequent, accompanied by a peculiar hissing noise. The patient appeared terrified, his eyes starting, and dreading instant suffocation, which indeed appeared inevitable. His pulse was scarce perceptible. These alarming symptoms abated a little in the night. *June* 28. Still great anxiety. Blister to the region of the larynx. In the course of the day, a return of the sense of suffocation, with a horrible state of anguish, during which the patient tore the blister off his throat, and appeared strangling—his head erect, and his neck stretched as much as possible. 29th. Sense of strangulation still more distressing than ever—he was constantly putting his hand to his throat, as if to remove something that was strangling him. He cried for prompt relief from his dreadful anguish, his eyes starting from their sockets, and his countenance an image of despair—the whole of the respiratory muscles in a state of convulsive orgasm. These horrible symptoms continued till four o'clock in the morning of the 30th, when death put an end to his sufferings.

Dissection. An abscess was found situated at the posterior part of the larynx, and also on the sides, the cavity of which was capable of containing a filbert, and its internal surface smooth. The cricoid cartilage was denuded. On closer examination, it was found that the abscess extended round the cricoid cartilage. The crico-arytenoid muscles were of a greenish colour. The arytenoid cartilages were confounded with the muscles abovementioned, which were in a state of disorganization. No nerves could be traced in them. The arytenoid muscle, however, and its nerves were well preserved. The glottis was not above three or four lines in length (its rima.) The articulations of the arytenoid cartilages with the cricoid were destroyed. The mucous membrane of the larynx was pale, and the cavity itself filled with reddish and frothy mucus, which was also found in the trachea and bronchia. The mucous membrane of the lungs was, generally speaking, of a deep red colour. The inferior and posterior portion of the right lung was hepatized, but all the rest of the lungs sound.

There was no disease in any other part of the thorax. *In the small intestines were found numerous ulcers perfectly cicatrised.—Ibid.*

DOMESTIC.

Interments in the city of New-York.—This subject has again very recently been brought before the constituted authorities of our city, on an application from a number of our citizens, so to modify the present law as to permit interments in the private vaults already existing in the different burial places within the city. This application was backed by the written opinion of upwards of a hundred of our physicians, who expressed it as their belief, that no possible injury to the health of the inhabitants could arise from burying in private vaults. Presenting itself in so formidable a shape, the question received from the corporation of our city, that deliberate consideration, to which its own intrinsic importance, as well as the various interests concerned in it, so justly entitle it. After being referred to a committee consisting of Alderman Cowdrey, Ald. King, and the Recorder Mr. Riker, who presented an able and elaborate report against the request of the petitioners, it was discussed at length before the board, and finally resolved by a very large majority, that it was inexpedient to make any alteration in the existing law in relation to interments. By the adoption of this resolution, burials in vaults as well as in common graves, are forbidden within the limits of our city.

On this decision we beg leave to congratulate the public. And to the members of the board who voted in favour of these resolutions, the meed of applause is justly due for the manly and independent stand which they took on this occasion. The report of the committee is, we understand, shortly to be published; if so, we shall make it the subject of especial notice in our next number.

Extract of a letter to Alex. H. Stevens, M. D. of New-York, dated Morris Town, Oct. 4th, 1823.

Absorption of the cutis.—There is at this place a curious case of the absorption of the cutis, while the cuticle remains entire. The patient is a young man of about 16 years of age. He was severely attacked with the typhus fever, which was attended with copious evacuations of blood from the bowels, and also an obstinate diarrhœa. As he began to recover, the absorption took place. It is situated in the neighbourhood of the large joints, and extends in horizontal bands nearly around the limbs. When the patient lay on his back, the cuticle over the absorbed parts presented a pink appearance, but when the patient was raised, these parts became of a bright crimson, and the minute vessels might be seen ramifying in

every direction. Whilst the process of absorption was going on, no pain or soreness was felt in the part. The cutis has never been replaced, but a kind of gelatinous mass appears to have been deposited. The divided ends of the cutis, which has the appearance of having been cut with a knife, may easily be brought in contact by means of the fingers. On passing the finger along the thigh, the deficiency is very evident. The young man suffers no inconvenience whatever from it. I have never heard of a similar case.

Yours respectfully,

JOS. DWIGHT HARRIS.

A case of Hæmatemesis, accompanying the menstrual discharge, by Ferdinand Ludlow, M. D.—I was called on the evening of Aug. 7th, to visit H—— H——, a girl aged 14 years, of a leuco-sanguineous temperament. Upon inquiry, I found she had menstruated for the first time, in December last. No peculiar symptoms accompanied the discharge. I found her labouring under great general irritation, her pulse full and hard, and her skin hot and dry. She complained of great sickness at the stomach, and of a violent pulsation in the epigastrium. Her discharges presented a morbid appearance, and her tongue was much coated.

I learned from her mother, that a few days before she was confined to her bed, she had suffered from violent head-ache, and sickness at the stomach, accompanied with stupor and pain in the epigastrium, and that on Friday evening, she had vomited for the first time, a quantity of blood, supposed to be nearly a pint. It appeared coagulated and mixed with a dark green fluid. The alvine discharges, produced by a dose of Rochelle salts this morning, presented the same dark green colour. A copious discharge of the menses commenced this morning.

She was put upon a strict diet, and directed to take early next morning a purgative composed of calomel and rhubarb ten grains each, combined with three of the pulvis antimonialis. The next day I found that her medicine had operated well, and that her symptoms were all much improved. The head-ache, however, still continued, and she had vomited once during the day; the injection was slightly marked with blood. She still complains of pulsation in the epigastrium, and frequent syncope.

Aug. 9th. I found her worse this morning, all her symptoms being aggravated. Previous to my visit, she had been seized with a violent fit of hysteria, from which she was relieved by the usual stimulant applications. The menstrual flux is less than yesterday. The head-ache, sickness at the stomach, and throbbing in the epigastrium still continue. I remained with her until 12 o'clock at night. During the evening, she threw up about a pint of blood. It was in a fluid state, and unmixed with aliment or other substances.

Aug. 10th. I found her more tranquil, her pulse and skin in a better state, and her appetite improving. A magnesia julep, ordered yesterday, had operated several times. The menstrual flux continued the same as yesterday. The pulsation in the epigastrium, and the sickness in the stomach, though both lessened, had not wholly disappeared. In the evening she complained of a general and troublesome itching over the whole surface of the body. She had vomited once, but had raised no blood.

Aug. 11. All her symptoms have improved, and the menstrual flux is lessening. A slight degree of sickness at the stomach, and itching of the skin still remain.

From this period she improved rapidly. The catamenial discharge ceased on the 15th, and her appetite and strength increased so fast, that on the 20th, she was in a state to make a visit to the country.

Medical commencement in the University of New-York.—At the annual commencement of the College of Physicians and Surgeons in the city of New-York, held on Tuesday the 12th of April, the degree of Doctor of Medicine was conferred on the following (fifty) gentlemen, to whom the Regents had granted said honour.

Benaiah Hanson, William C. Hickock, Theodore L. Mason, Luke Barker, Oliver Bronson, James T. Cromwell, Joseph W. Duval, Edwin Dey, Edwin A. Ely, John C. Fanning, John I. Graves, Wormoldus S. Kuypers, James Macdonald, Peter Parks, James H. Rodgers, Henry Rose, John I. Ruton, Marcus Sears, James O. Smith, Ebenezer Storer, Junius Thompson, Van Rensselaer Ten Broek, Philip Ten Eyck, John Tiebout, jun. Philip Van Arsdale, Alexander F. Vache, Field Ver Meule, Edwin Webb, John M. Cornelison, Cicero Hunt, John R. Hunt, Isaac James, Amos S. Miller, Bernard M'Neil, Archibald B. Simpson, William H. Glascock, Frederick J. Cutlar, James B. Yellowley, Trezevant de Graffenried, Edmund J. Felder, Thomas W. Hutson, John S. Palmer, Alexander Williams, Thomas B. Turner, James M. Williams, Stith F. Jones, John A. Whetstone, Jacobus Moranus, George W. Codwise, Richard Charles.

Prize Essay on Consumption.—Dr. Andrew Hamersley, of thi scity, is the writer of the successful essay, which obtained the premium of fifty dollars offered by the State Medical Society for the best dissertation on the causes and treatment of consumption. We understand that Dr. H. is about putting his essay to press.

The Linnæan Society of this city, a branch of the Linnæan Society of Paris, held its Annual Meeting on the 13th of June, at the Governor's room in the City Hall. His Excellency the Governor was present, and Dr. Mitchill presided. Dr. Felix Pascalis read a very able and interest-

ing memoir on the discoveries made during the past year in the several branches of science which come within the cognizance of the Society.—His address was ordered to be printed.

The following is a list of the members and officers of the New-York Section of the Linnæan Society :

Honorary Members of the Parent Society.

SAMUEL L. MITCHILL, M. D. &c. *Honorary President.*
FELIX PASCALIS, M. D. *President.*
THOMAS JEFFERSON.
DE WITT CLINTON.
SAMUEL AKERLY, M. D.
BENJAMIN SILLIMAN, M. D.
DAVID HOSACK, M. D.

Corresponding Members.

JACOB BIGELOW, M. and JNO. DAVIS, of Boston.
N. S. HARBEMONT.
C. LE SUEUR.
THOMAS LION, M. D.
JNO. TORREY, M. D.
JAMES E. DE KAY, M. D.
Rev. LEWIS DE SCHWEINITZ.
JOSEPH BLOODGOOD, M. D.
JEREMIAH VAN RENSSELAER, M. D.
ABRAHAM HALSEY, Esq.

The following gentlemen were also elected additional Corresponding Members :

LEWIS C. BECK, M. D. of Albany.
Baron LEDERER, Consul of Austria, in the U. S.
CHARLES HOOKER, M. D. of New Haven.

Rensselaer School.—An institution under this name has been recently founded at Troy, in the state of New-York, by the liberality of the Hon. STEPHEN VAN RENSSELAER of Albany. The subjects of instruction are, Chemistry, Geology, Mineralogy, Botany, and their attendant arts: and the grand and paramount object is, their practical application to the purposes of life. The students are directed to experiment in succession during the winter, while in summer, their acquired knowledge is to be applied to the analysis of soil, and the process of manufactures, and the mechanic arts. But it is to be practically applied to agriculture in its varied and diversified branches. The plan, in fine, is directed to the *scientific education* of young men, whose opportunities are too confined for receiving the ordinary collegiate instruction, and in this view, it supplies an important void in our means of diffusing knowledge.

We shall not dwell on the diffusive benevolence of the founder of this school, or enlarge on the rich promises of good which it holds forth in perspective. The patronage which the cause of science has received for many years from the same source, has inseparably connected the name of Van Rensselaer with the progress of improvement in this country; nor can its history ever in after times be written without assigning him a place amongst its earliest and most liberal benefactors.

The following is a list of the officers of this Institution:

The Rev. Samuel Blatchford, D. D. *President.*

O. L. Holley, Esq., and Theodoric Romeyn Beck, M. D. *Vice-Presidents.*

Dr. Moses Hale, *Treasurer.*

Amos Eaton, Esq. of Troy, *Professor of Chemistry and Natural Philosophy, &c.*

Lewis C. Beck, M. D. of Albany, *Professor of Botany, Mineralogy, Zoology, &c.*

Medical School of the University of Vermont.—The following are the names of the Professors, who, under the new organization, have been attached to this institution, with the different departments in which they are to instruct:—

Henry S. Waterhouse, M. D. *Surgery and Obstetrics.*

George W. Benedict, A. M. (Professor of Mathematics and Natural Philosophy in the University.) *Chemistry.*

John Bell, M. D. *Anatomy and Physiology.*

William Sweetser, M. D. *Theory and Practice of Physic and Materia Medica.*

The good share of patronage already received by this institution—its peculiarly advantageous location—the growing importance of the town in which it is situated, with the facility of its communication, both by land and water, with the various important parts of our country—its connexion with the State University, whose prospects, notwithstanding its recent misfortunes, are so fast brightning—and finally, the strong and active interest taken in it by many distinguished and enlightened individuals, all combine to make us cherish the hope that it is destined to maintain a highly respectable rank among the Medical Schools of our country.

The lectures will commence at Burlington, on the second Wednesday of September. The terms of instruction are continued as heretofore.

In Dr. Delafield's paper on Artificial Pupil, he has alluded to the difficulty of obtaining proper instruments for operating on the eye, and particularly the iris knife, described in his paper. Since it was printed, he has succeeded in procuring an excellent iris knife, with which he has operated with perfect facility. It was made by Rose and Sellers, cutlers, of this city.

QUARTERLY BIBLIOGRAPHICAL NOTICES.

Annals of the Lyceum of Natural History.

The 9th No. of this Journal has just appeared. It contains papers on Entomology, Herpetology, and a valuable history of the obscure Genus Carex, by Mr. De Schweinitz. We notice as curious, the fact, that Mr Greville, the celebrated author of the Flora Exotica, and one of the most distinguished botanists of Scotland, appears as a contributor to this volume.

The Medico-Chirurgical Review, and Journal of Medical Science. Conducted by associated Physicians and Surgeons, and superintended by James Johnson, M. D. (No. 17.) New series, No. 1. New-York, reprinted by James V. Seaman, Broadway.

This number completes the re-printing of this Journal up to June 1824. We are happy to learn from the enterprising publisher in this country, that the patronage extended to this Journal is abundantly sufficient to encourage him in continuing its publication. Devoted as this review is, to the analysis of works, to most of which the profession in this country are necessarily denied access, we have always looked upon its republication here as a substantial service rendered to our medical brethren in the United States. The public opinion has already been so decidedly and favourably expressed in relation to this work, that it is unnecessary to add our testimony to the ability and spirit with which it is conducted.

Elements of Medical Jurisprudence. By T. R. Beck, M. D. Professor of the Theory and Practice of Physic, and Lecturer on Medical Jurisprudence in the College of Physicians and Surgeons of the Western District of the State of New-York. Second edition, with notes, and an appendix of original cases and the latest discoveries, by William Dunlop, member of the Royal College of Surgeons, London, of the Medico-Chemical Society, and of the Wernerian Society of Natural History, Edinburgh, and Lecturer on Medical Jurisprudence, &c. &c. London, 1825.

We hope we need offer no apology for presenting our readers with the following extracts from the preface of Dr. Dunlop, to the London edition of this work :

"We do not claim for the present work, the meed of a faultless performance, but we fear not to challenge a comparison of it with any of the English works, in scientific accuracy, philosophical plainness and precision of style, extent of research, genuine scholarship and erudition, pointedness of illustration and copiousness of detail, and reference to original documents. We may say with Dr. Andrew Duncan, Jun. in his excellent review of the first edition, that "under the unassuming title of Medical Jurisprudence, Dr. Beck has presented us with a comprehensive system which embraces almost every valuable fact or doctrine relating to it. Each of its diversified departments has been investigated so minutely, that few cases can occur in practice, in which it will be necessary to seek for fur-

ther information."* Dr. Male, also, the father of English Medical Jurisprudence, has the highest opinion of the book, and says, "Dr. Beck has recently published one of the best books on Juridical Medicine, which has been compiled in this or any other country." Supported by such unqualified opinions of its excellence, from two of the best Judges of the subject in the empire, Dr. Duncan and Dr. Male, we submit it with confident hopes of its success, to the practitioners and students of medicine and law."

* Review of Beck in the Edinburgh Medical and Surgical Journal, June 1824.

Lectures on Geology; being outlines of the Science, delivered in the New-York Athenæum, in the year 1825. By JER. VAN RENSSELAER, M. D. Associate and Lecturer on Geology to the Athenæum, member of the Royal Medical Society, Edinburgh, &c. &c. New-York, E. Bliss & E. White, 1825.

This work furnishes pretty ample proof of the increasing zeal with which the study of Geology is pursued in this country. It contains a large mass of interesting and valuable matter in relation to the science of which it treats, at the same time that it exhibits an honourable evidence of the industry of its author. In the course of the work there is given a synopsis of rocks, (valuable to students) arranged according to the views of Humboldt, Werner, and Mac Culloch.

The volume closes with a list of fossil organic remains found in the United States, the only one we believe yet published.

Journal Medical de la Gironde. Redigé par M. M. Bonnet, Burguet, Dariste, David, Dupuch-Lapointe, Dupuy, Lartigue, Levacher de Boisville, Leon Marchant, Pereyra et de Saincrie. Tome Troisieme. A Bordeaux, 1825.

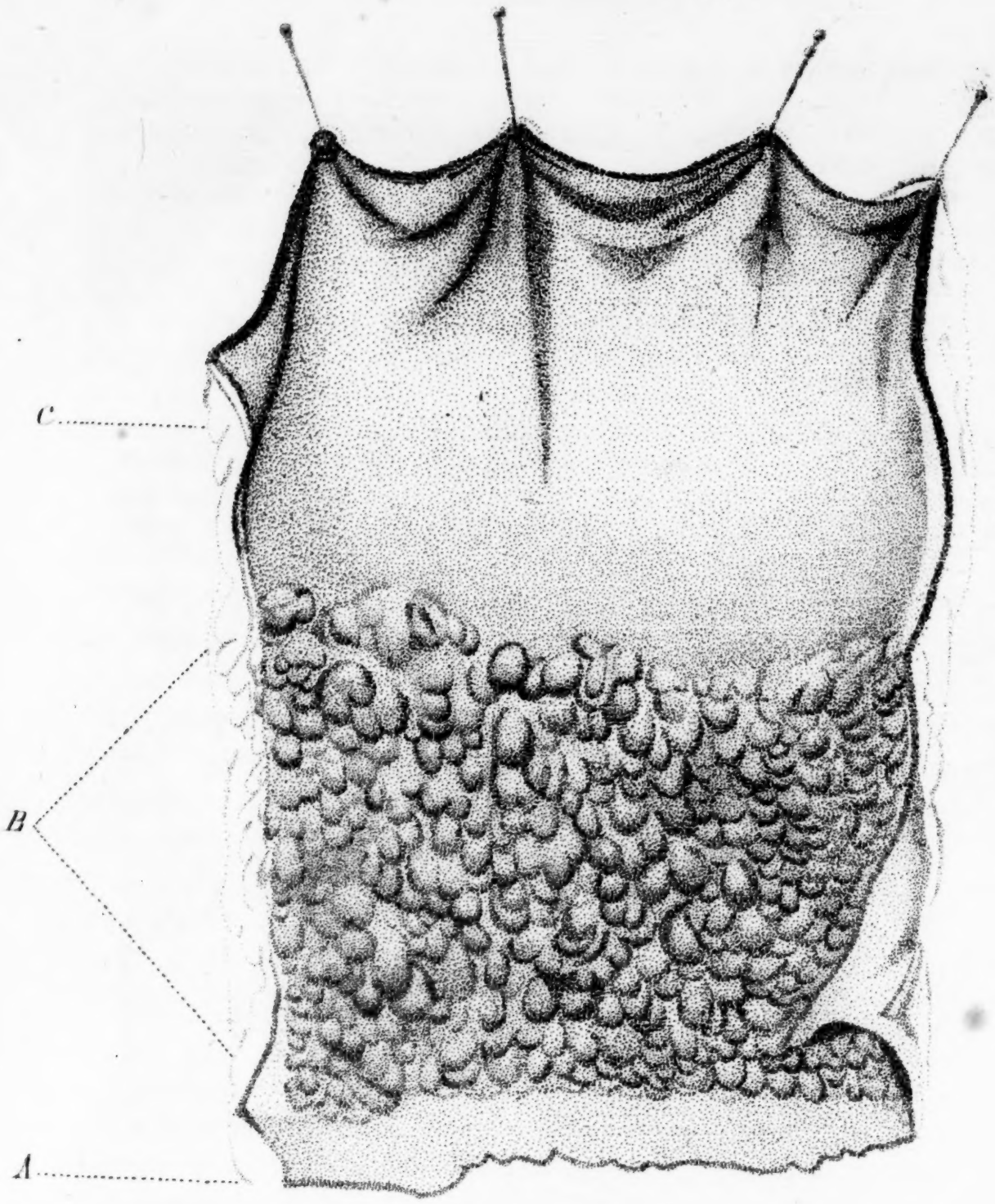
We have received, in exchange, fourteen numbers of this Journal, which appears monthly in the city of Bordeaux, and is devoted exclusively to the dissemination of medical knowledge. The numbers in our possession contain a variety of useful and important essays, from which we shall, hereafter, avail ourselves to enrich our foreign intelligence.

An Address delivered March 8th, 1825, *in the Hall of the Medical Faculty of Jefferson College, located in Philadelphia.* By B. RUSH RHEES, M. D. Professor of Materia Medica of Jefferson College. Philadelphia. 8vo. pp. 30.

NOTICE.

State Medical License.—Candidates wishing to obtain licenses to practise Medicine and Surgery, are informed, that the Censors of the State Medical Society for the Southern District will hold their examinations in the city of New-York. They are requested to apply to either of the censors.

FELIX PASCALIS, M.D.
CHARLES DRAKE, M. D. } Censors.
JOHN B. BECK, M. D.



The drawing represents The lower portion of the rectum slit open

A The intestine below the tumour and just above the sphincter in a state free from disease but contracted by the alcohol.

B The diseased part

C The intestine above the tumour healthy in texture but much enlarged

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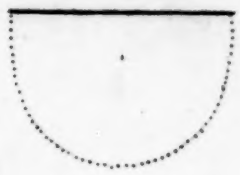

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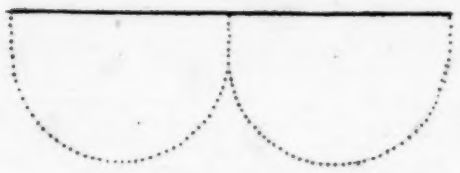

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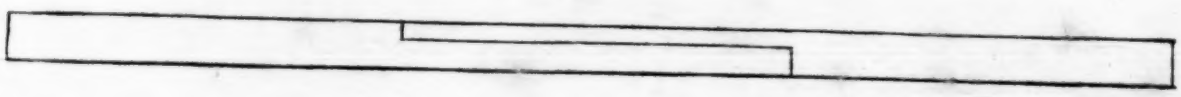

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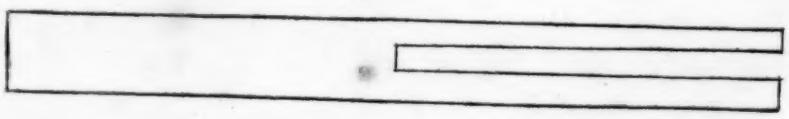

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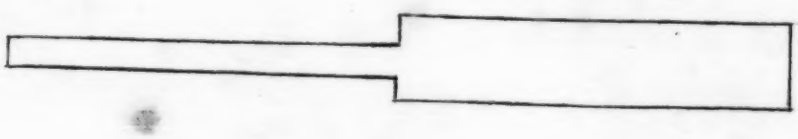

J. B. del!